



**CEMENT
BOND LOG
WITH GAMMA RAY**

PIONEER
Pioneer Energy Services

Company	BONANZA CREEK ENERGY		
Well	STATE PRONGHORN 42-32-31MRLNB		
Field	WATTENBERG		
County	WELD	State	COLORADO
Location:	API # : 05123423500000		Other Services
SHL: 1286' FNL & 750' FEL NENE	LAT: 40.36103		NONE
LONG: -104.22621	SEC 32 TWP 5N RGE 61W		
Permanent Datum	GL	Elevation 4565'	
Log Measured From	KB		K.B. 4582'
Drilling Measured From	KB ... 17' ABOVE GL		D.F. 4582'
			G.L. 4565'

Date of Service	DECEMBER 8, 2015		
Run Number	ONE		
Depth Driller or PBTD	N/A		
Depth Logger	5680'		
Bottom Log Interval	5678'		
Top Log Interval	SURFACE		
Open Hole Size	8.75"		
Type Fluid	FSW		
Fluid Level	30'		
Fluid Density	8.33 PPG		
Max. Recorded Temperature	181 F		
Max. Wellhead Pressure	0 PSI		
Wellhead Connection	OPEN		
Estimated Cement Top	SEE LOG		
Unit Number	P1		
Wireline Size	9/32"		
Location	FT MORGAN, CO		
Recorded By	SCHUMAN		
Witnessed By	M.R.K. BUNKER		
	Size	Wt/Ft	Top
Tubing Record			Bottom
Surface Casing	9.625"	36#	SURFACE 1415'
Production Casing	7"	26#	SURFACE 6539'
Liner Record	4.5"	11.6#	5621' N/A

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All interpretations are opinions based on inferences from electrical or other measurements and Pioneer Wireline Services, LLC cannot and does not guarantee the accuracy or correctness of any interpretation, and Pioneer Wireline Services, LLC will not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees.

Comments

N/A DENOTES NOT AVAILABLE OR NON-APPLICABLE.
LOG CORRELATED TO KB

THANK YOU FOR USING PIONEER ENERGY SERVICES

Your Pioneer Energy Services Crew	Tool Data - Services	Serial Number
Engineer: SCHUMAN	CBL	141166
Operator: GARCIA	GR	111211
Operator: STUMP		
Operator:		

DatabaseC:\ProgramData\Warrior\Data\state pronghorn 42-32-31mrlnb_cbl.db
Dataset field/well/run1/pass3/_vars_


DatabaseC:\ProgramData\Warrior\Data\state pronghorn 42-32-31mrlnb_cbl.db
Dataset field/well/run1/pass3/_vars_

Top - Bottom

BHTEMP_Src	PPT usec	CASEWGHT lb/ft	MAXAMPL mV	MINAMPL mV	MINATTN db/ft	SRFTEMP degF	CASETHCK in
TEMP	0	26	0	1.5	0.08	0	0
CASEOD in 7	PERFS 0	TDEPTH ft 0	BOTTEMP degF 100	BOREID in 8.75			

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb)
			CHD-STNDRD Standard Cable Head	1.00	1.69	10.00
			CENT-PTS275	2.83	2.75	
IntTemp	14.88					
TEMP	13.86					
			RBT-RBT-C3 (141166_7in) Probe Radii Bond Tool with Digital Telemetry	9.40	2.75	90.00
WVFS8	11.63					
WVFS7	11.63					
WVFS6	11.63					
WVFS5	11.63					
WVFS4	11.63					
WVFS3	11.63					
WVFS2	11.63					
WVFS1	11.63					
WVFCAL	11.63					
WVF3FT	11.63					
WVF5FT	10.63					
HEADVOLT	7.38					
			CENT-PTS275	2.83	2.75	
CCL	3.63					

GR	2.30		GR_CCL-Probe (111211) Probe Gamma CCL	4.54	2.75	100.00
Dataset: state pronghorn 42-32-31mrlnb_cbl.db: field/well/run1/pass3 Total length: 20.60 ft Total weight: 200.00 lb O.D.: 2.75 in						



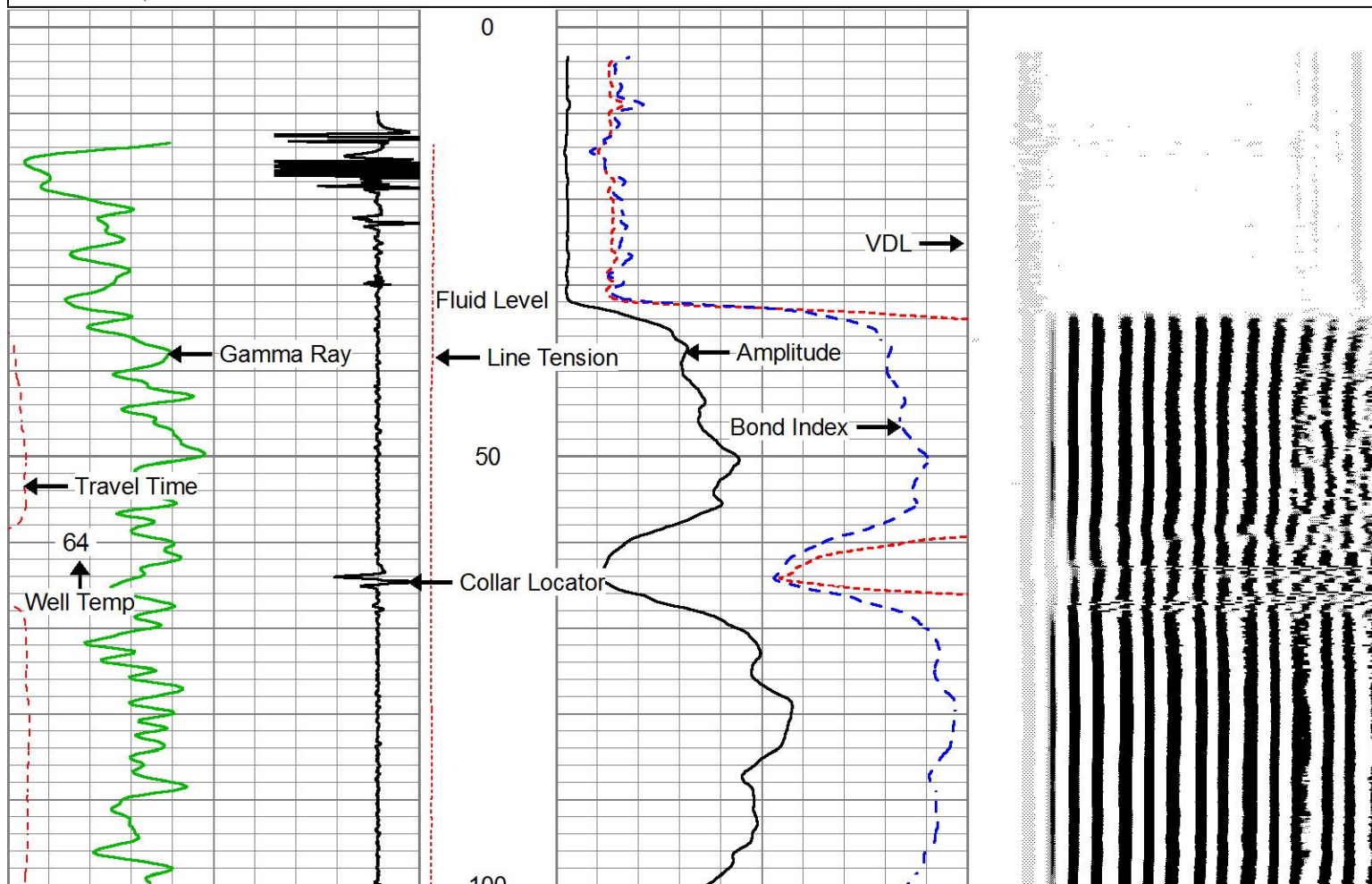
MAIN LOG

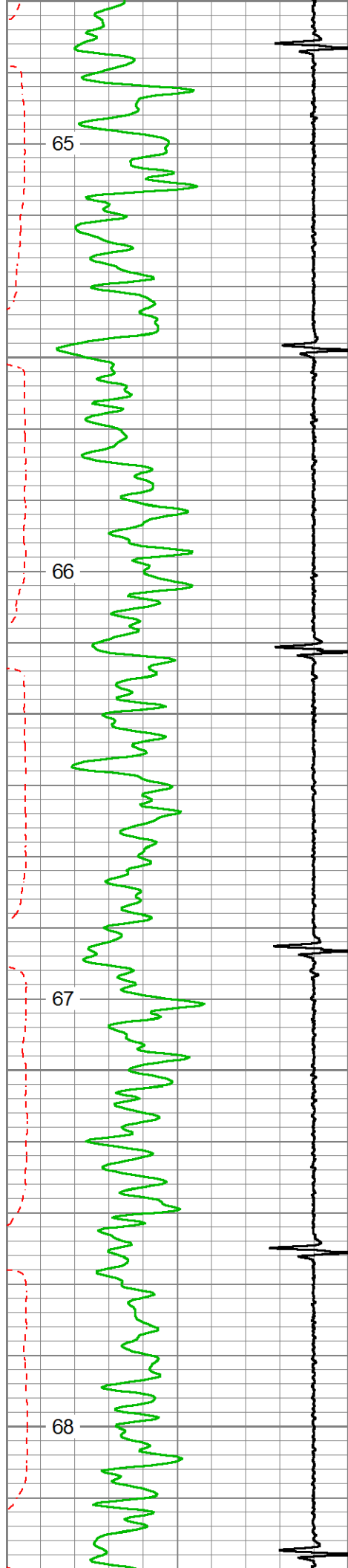
LOGGED WITH 0 PSI APPLIED TO WELLHEAD

Database File	state pronghorn 42-32-31mrlnb_cbl.db
Dataset Pathname	pass3.1
Presentation Format	pinr_cbl
Dataset Creation	Tue Dec 08 18:21:30 2015
Charted by	Depth in Feet scaled 1:240

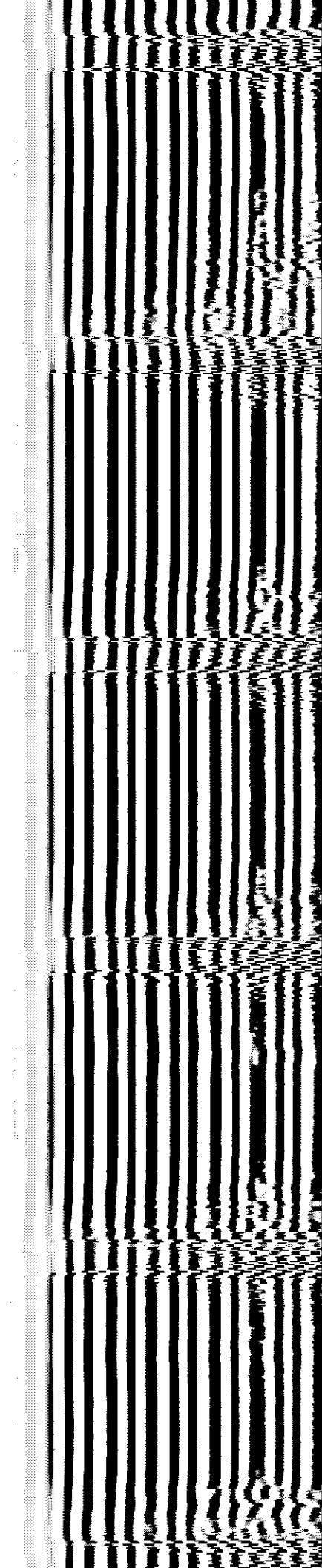
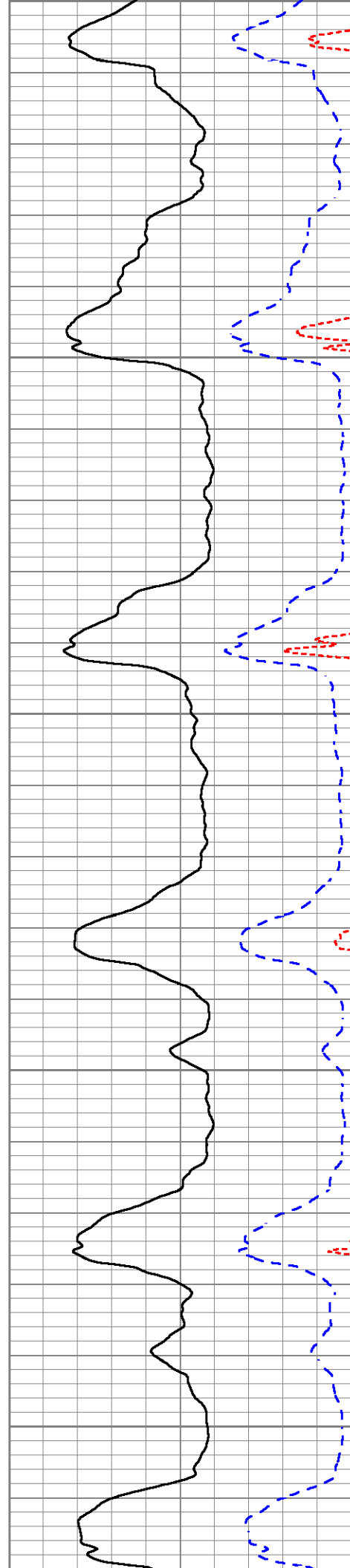
290	Travel Time (usec)	190	Line	0	Amplitude (mV)	100	200	VDL	1200
-9	Collar Locator	1	Tension	1	Bond Index	0			
0	Gamma Ray (GAPI)	150	0	(lb'2000)					

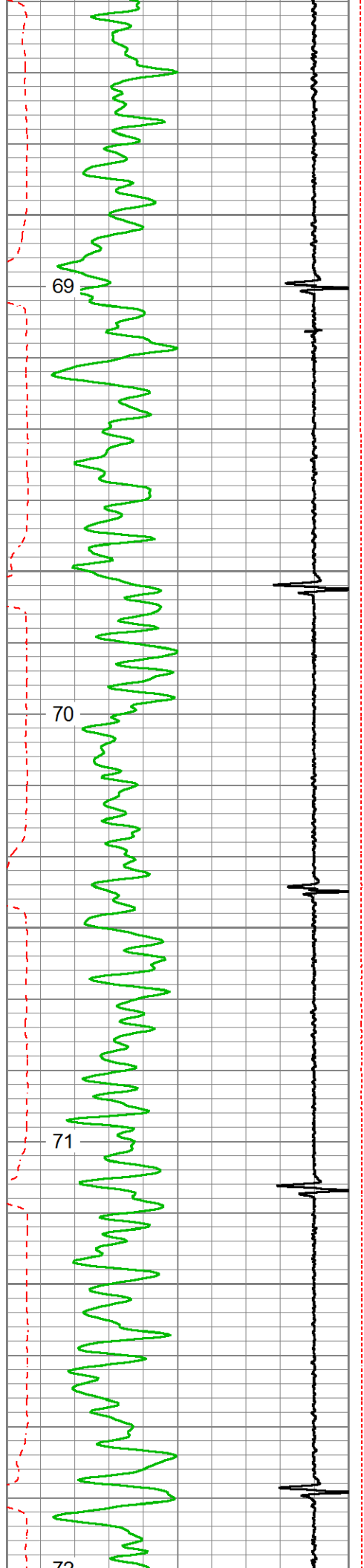
Well Temp	
(degF)	





100
150
200
250
300



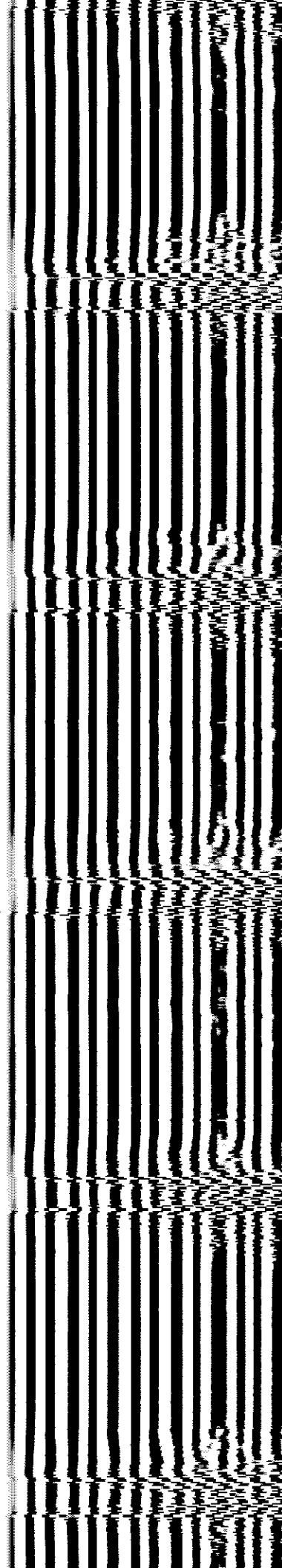
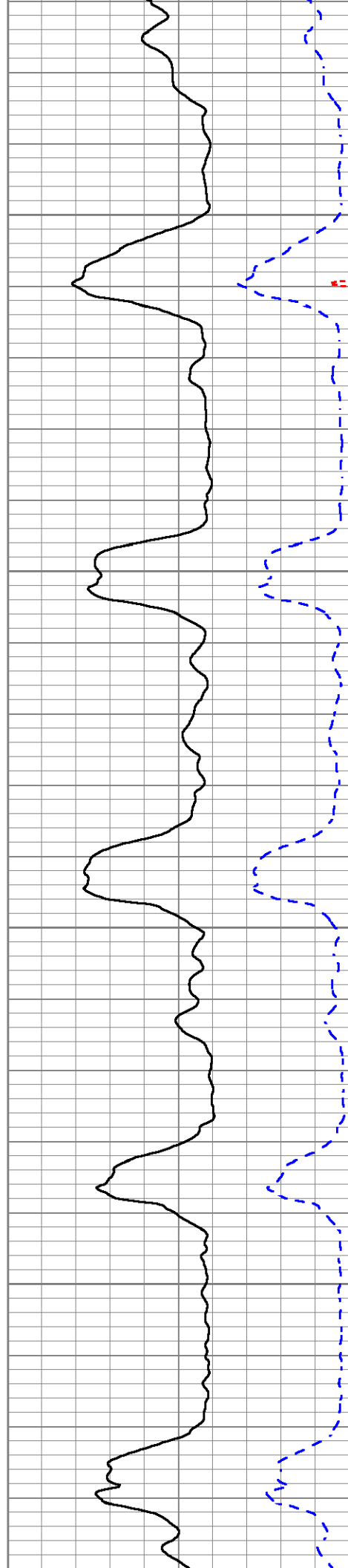


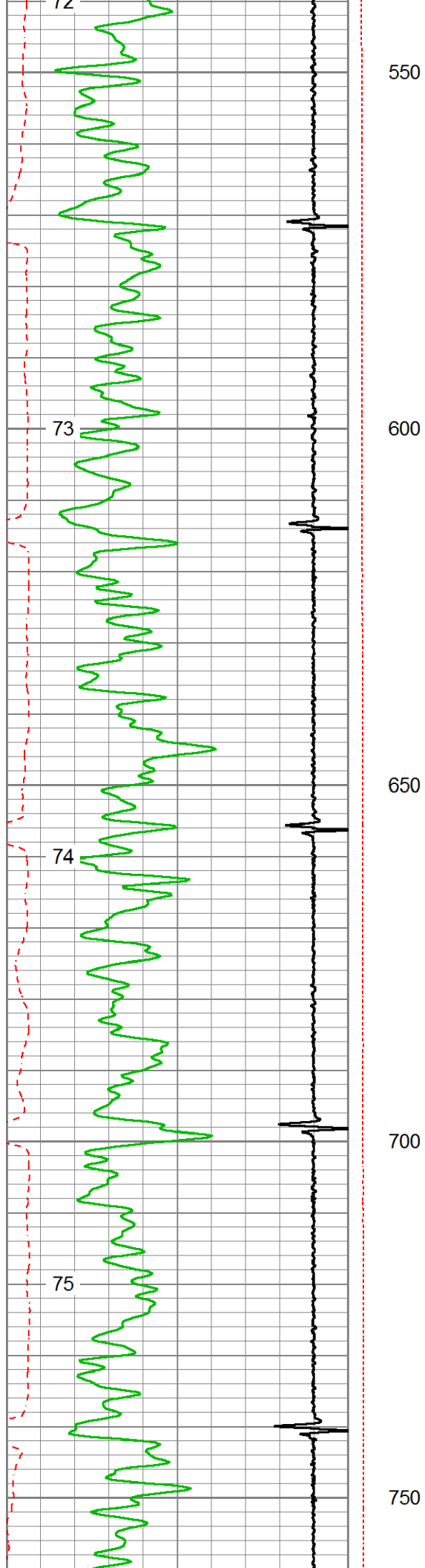
350

400

450

500





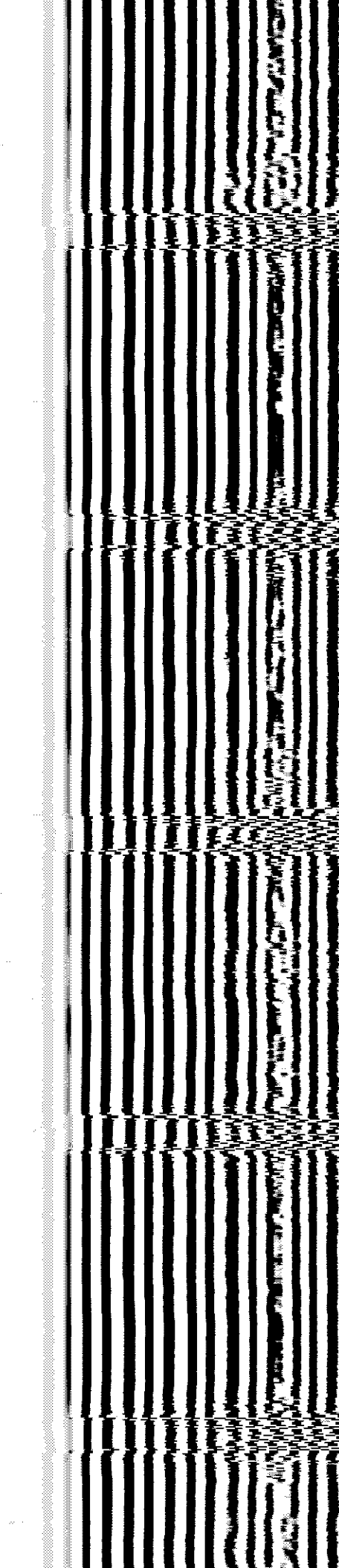
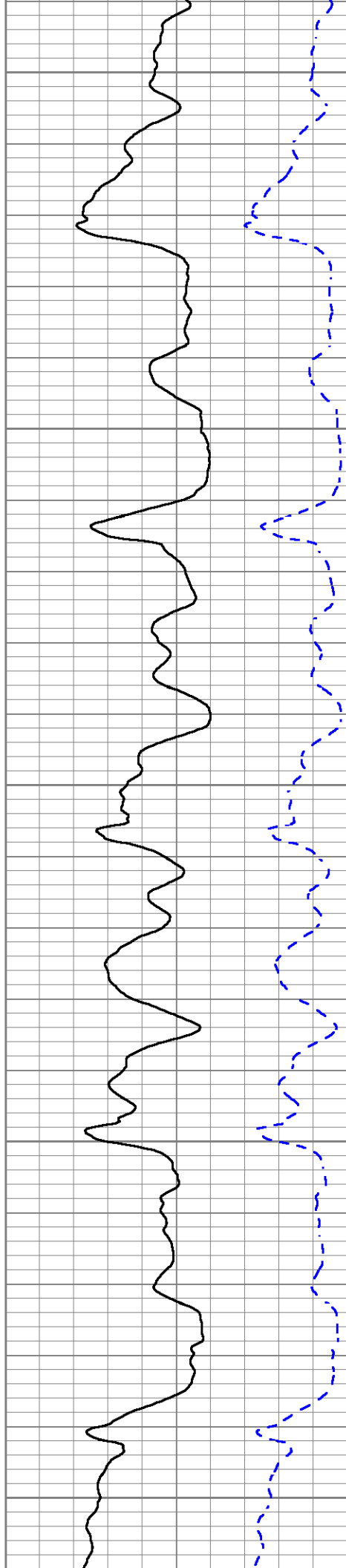
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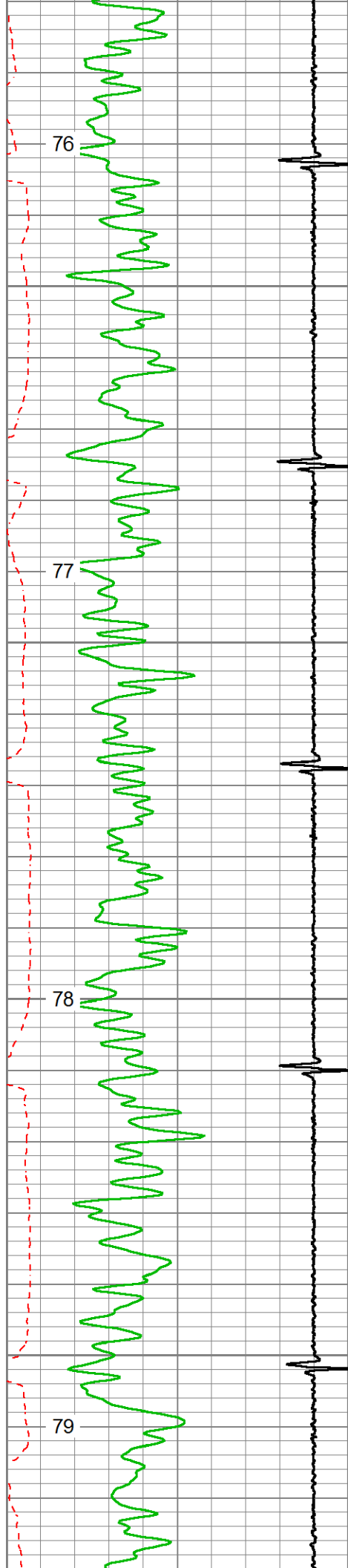
600

650

700

750



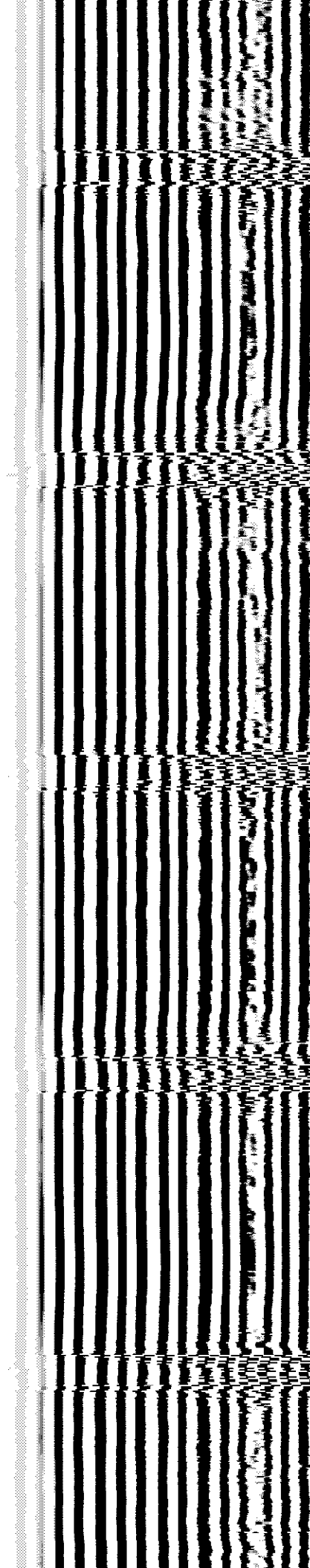
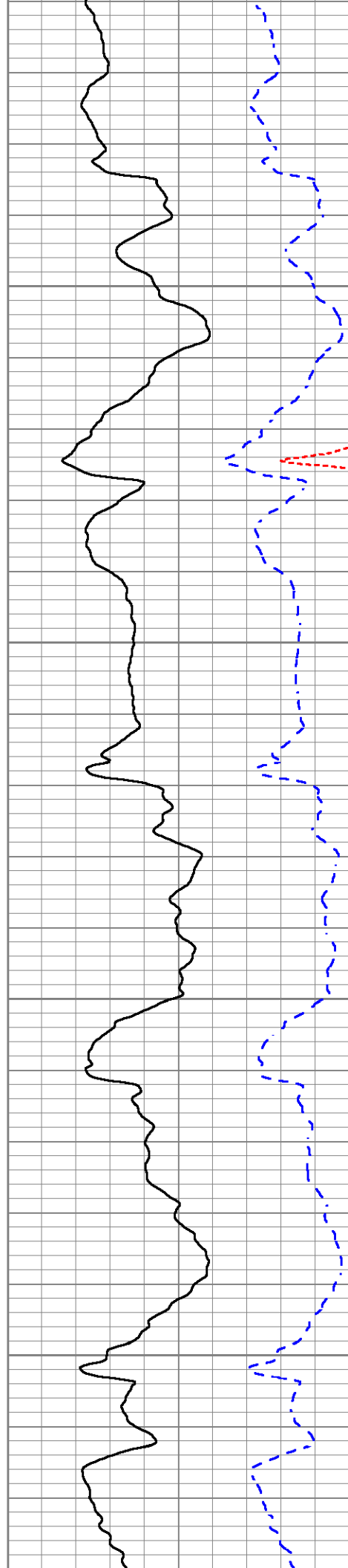


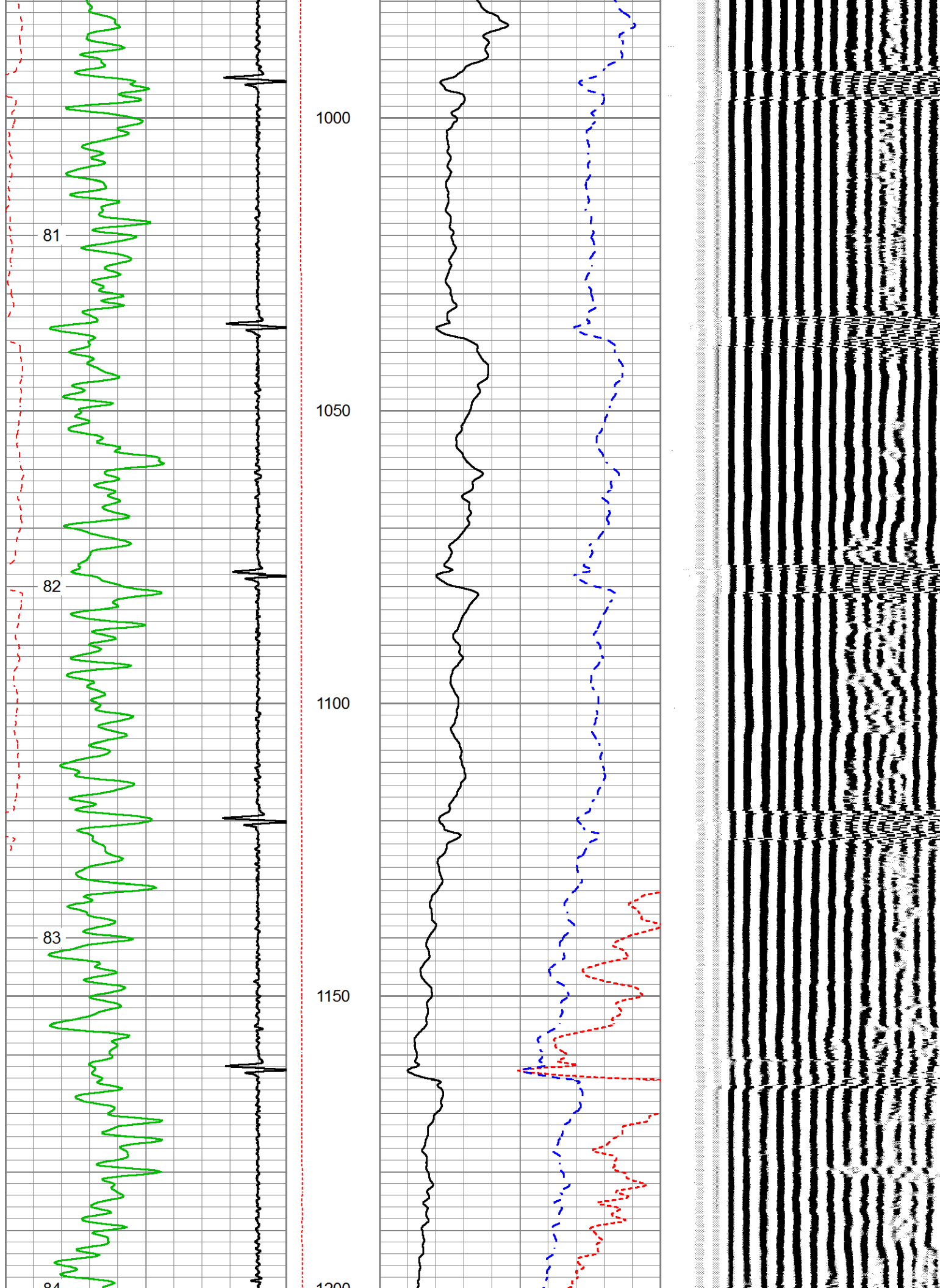
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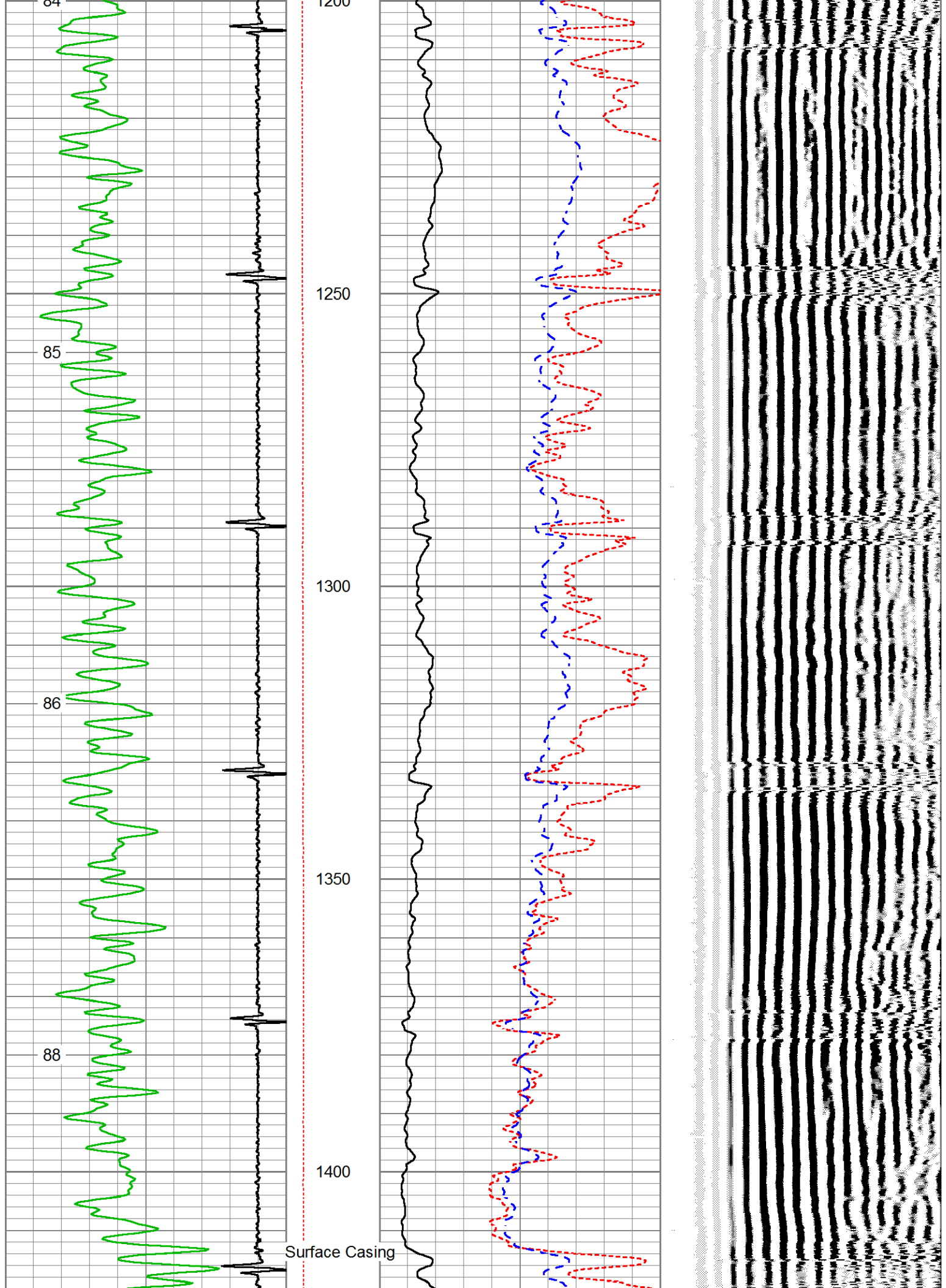
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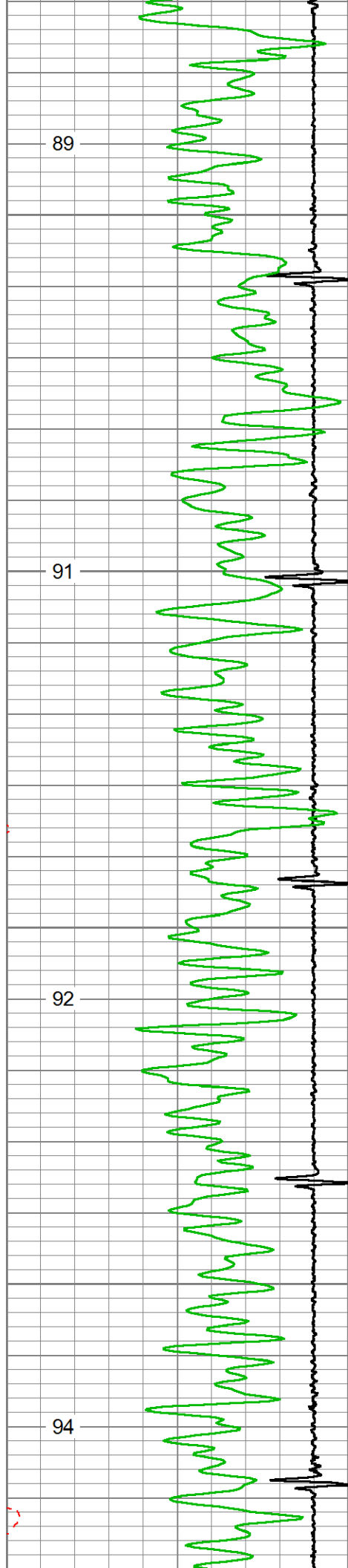
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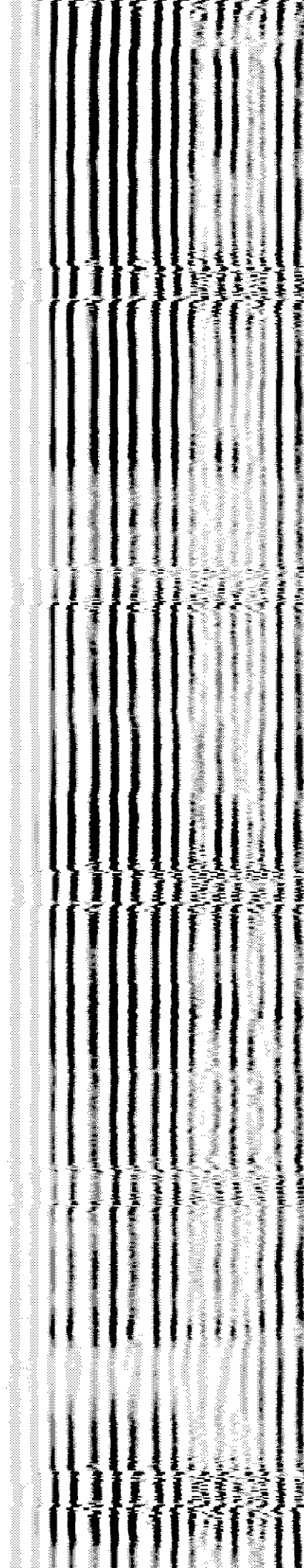
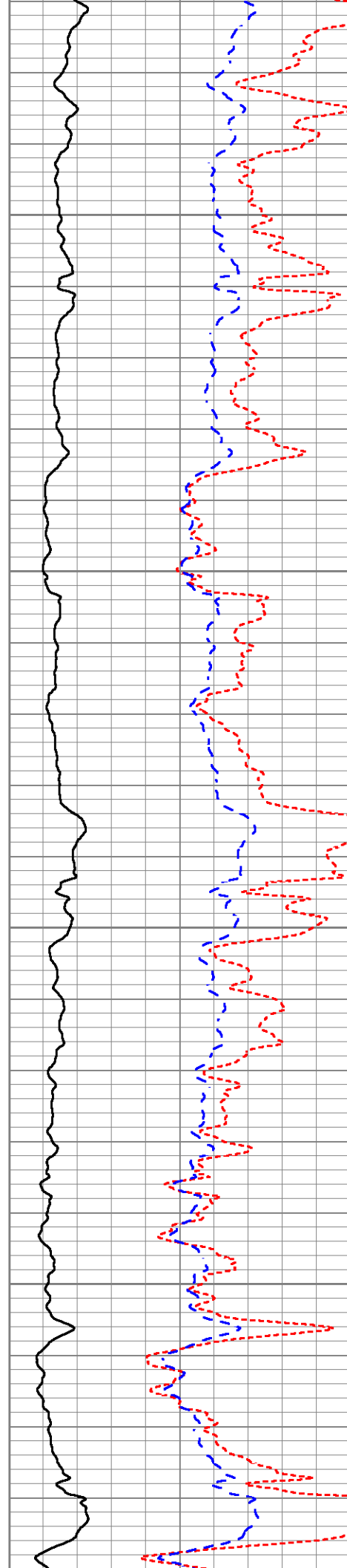


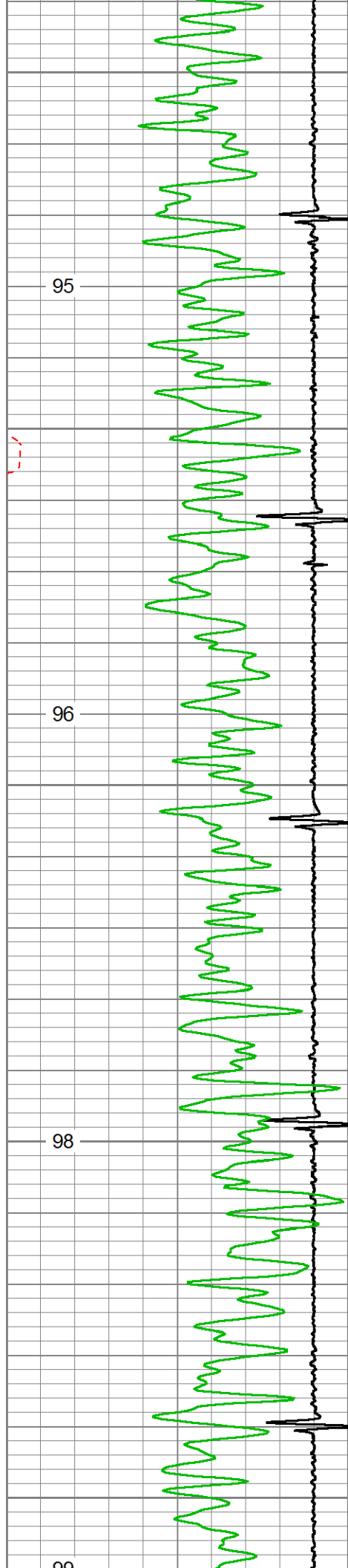
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1500

1550

1600





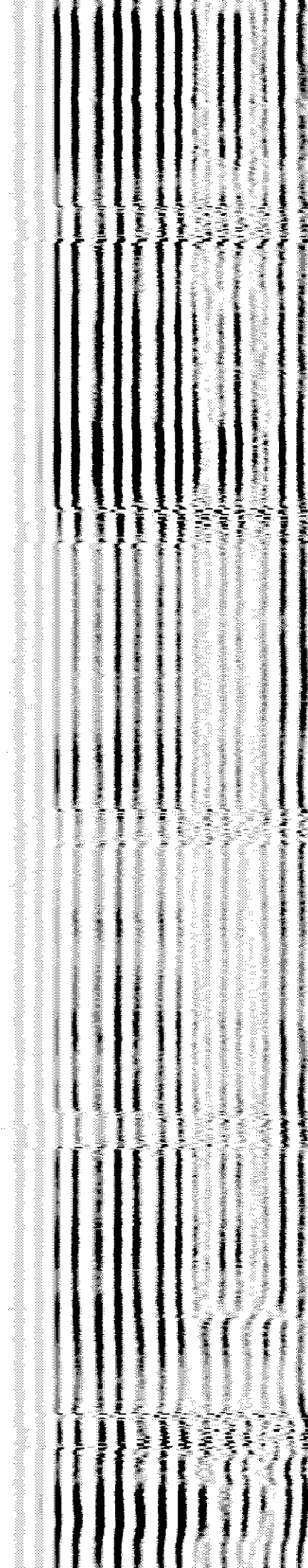
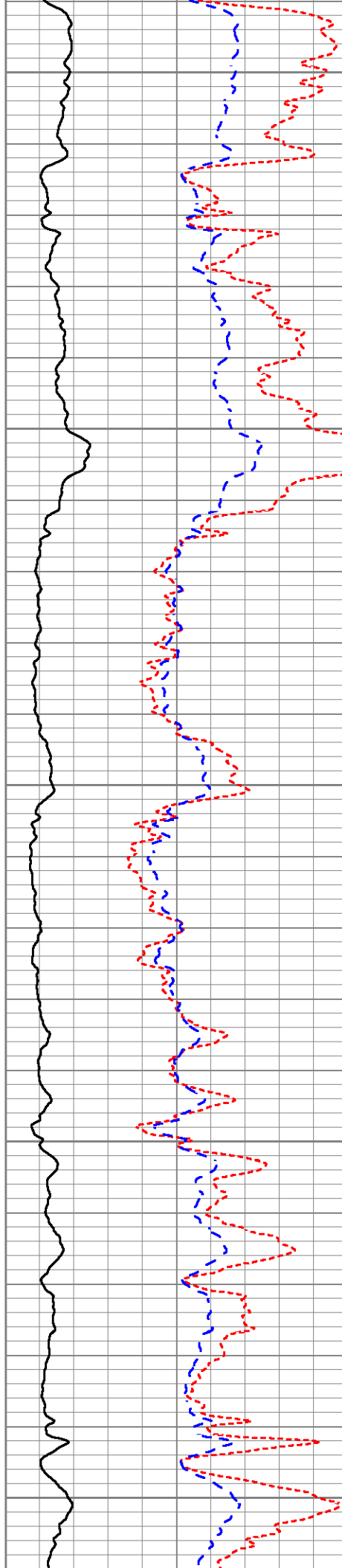
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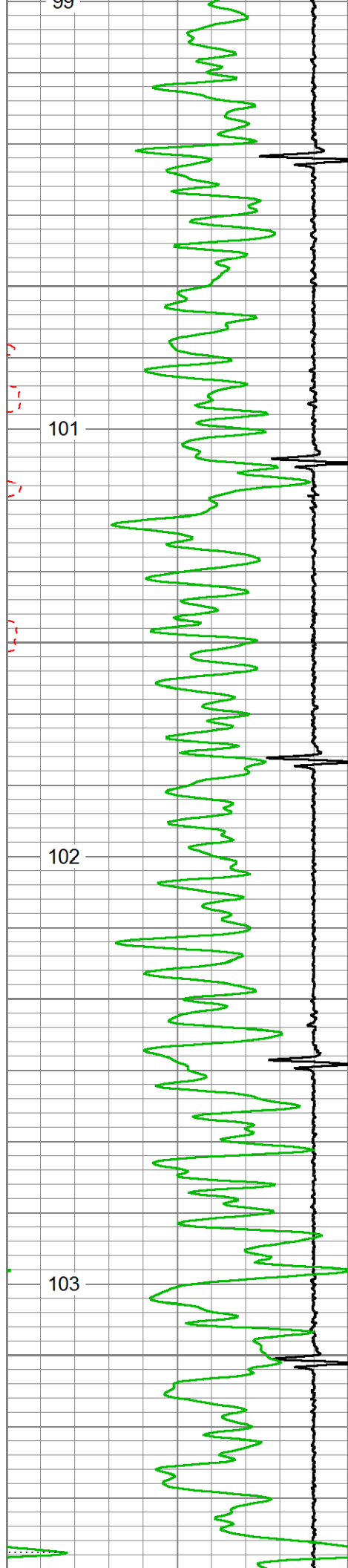
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1750

1800

1850



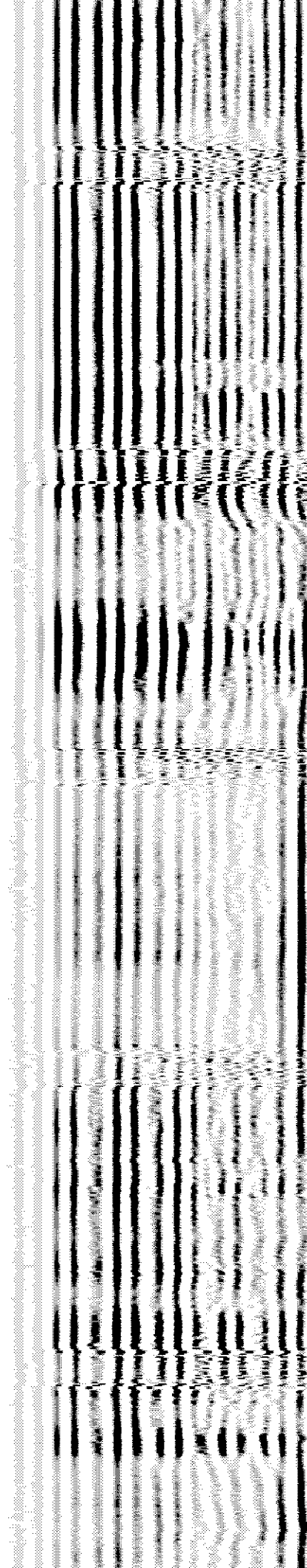
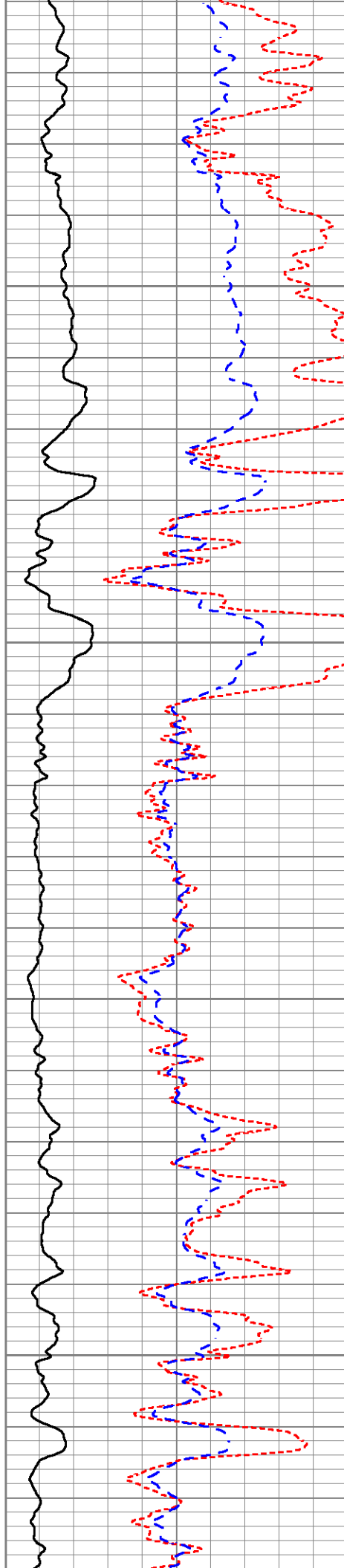


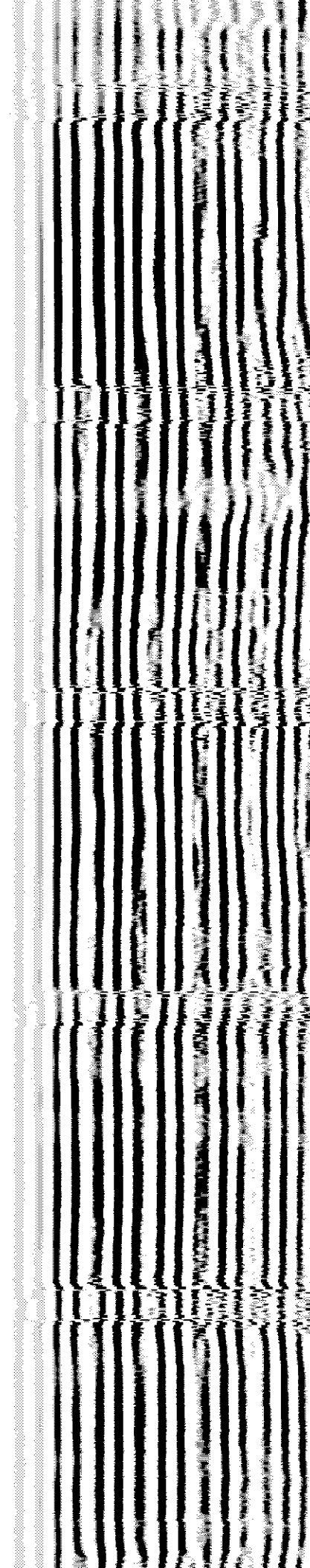
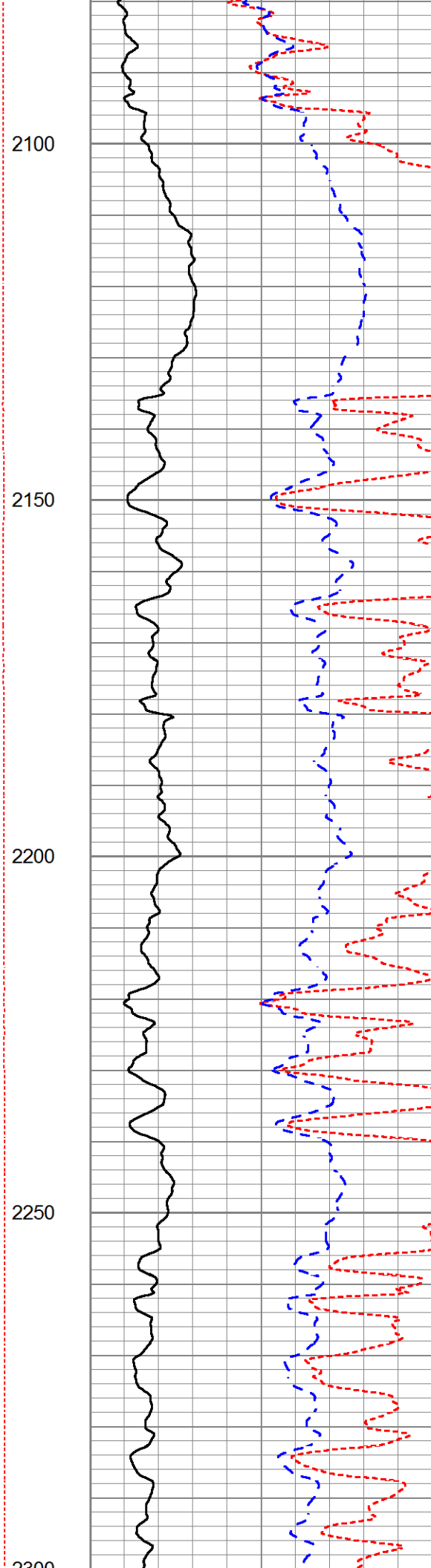
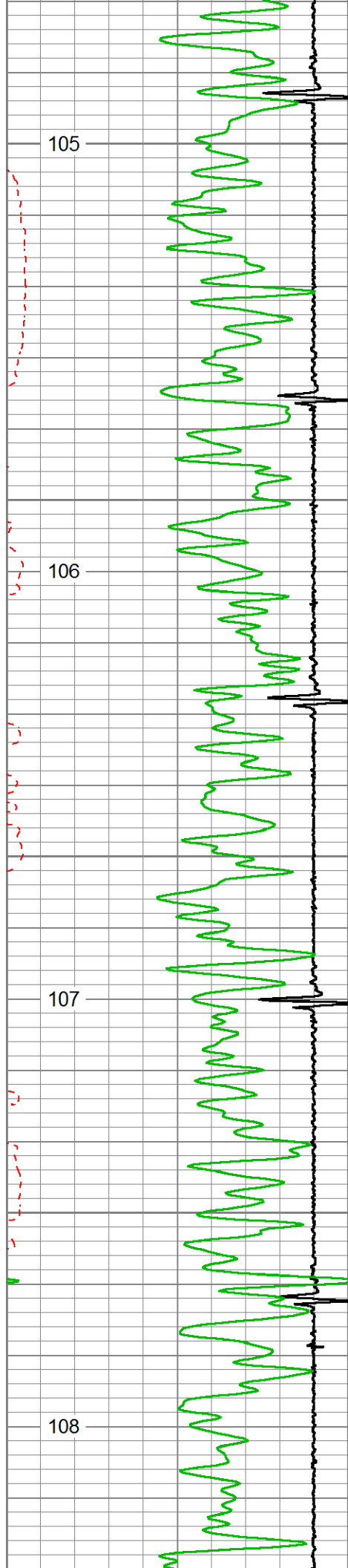
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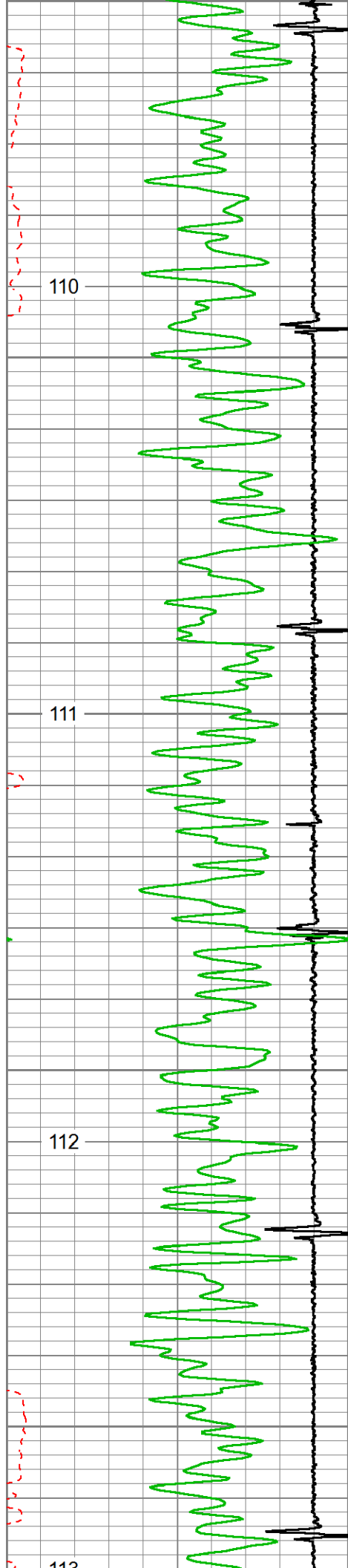
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2000

2050







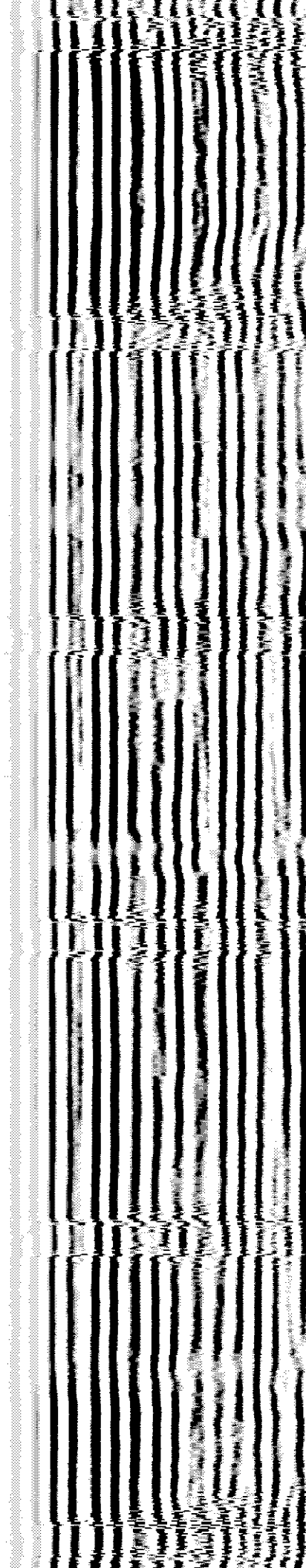
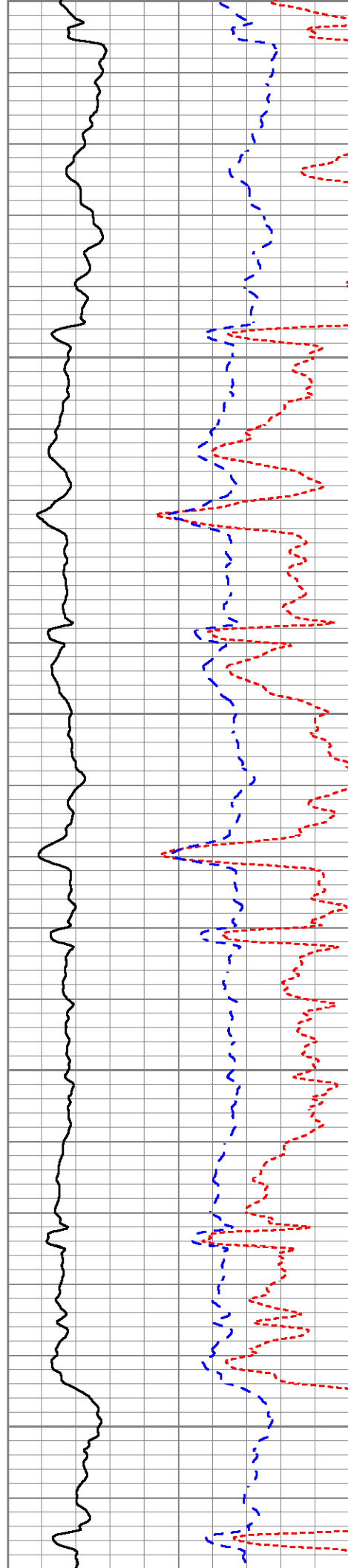
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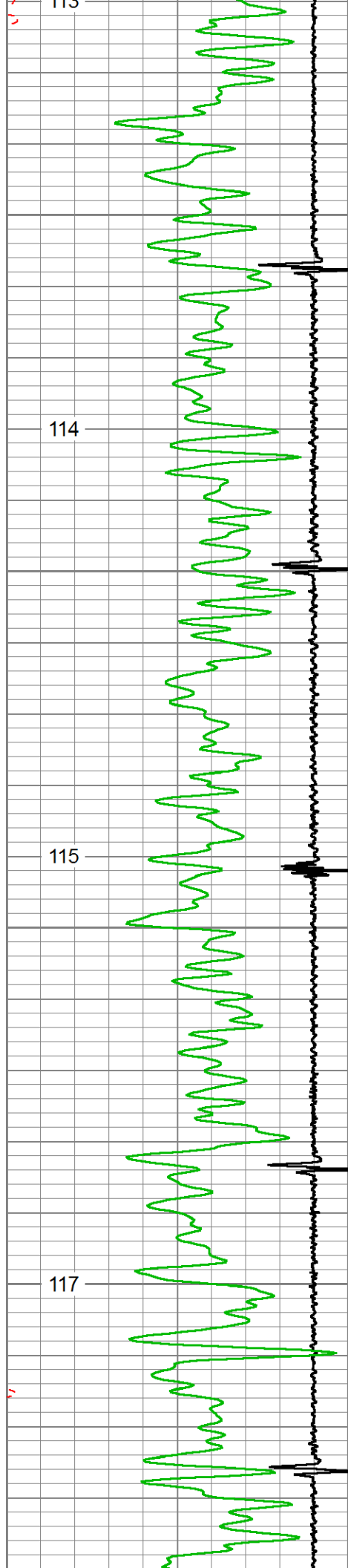
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112

113

2300
2350
2400
2450
2500



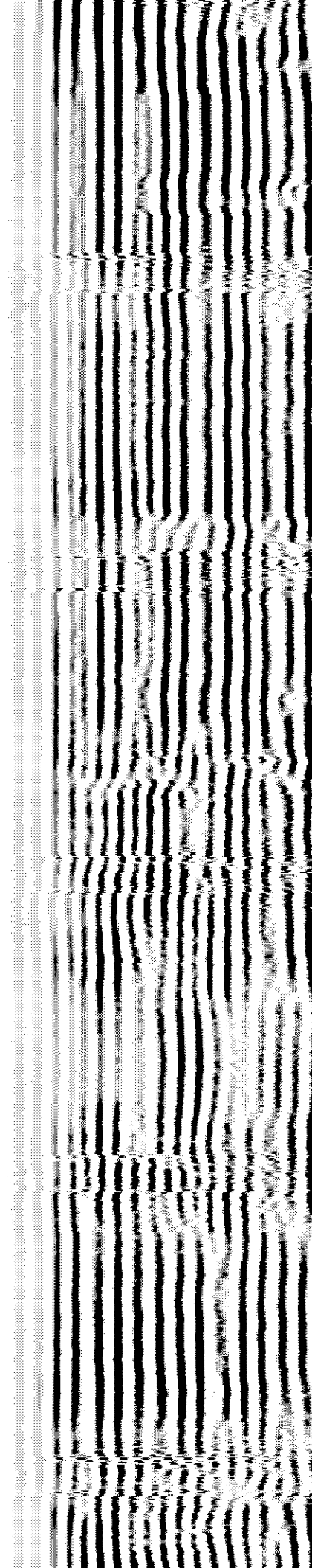
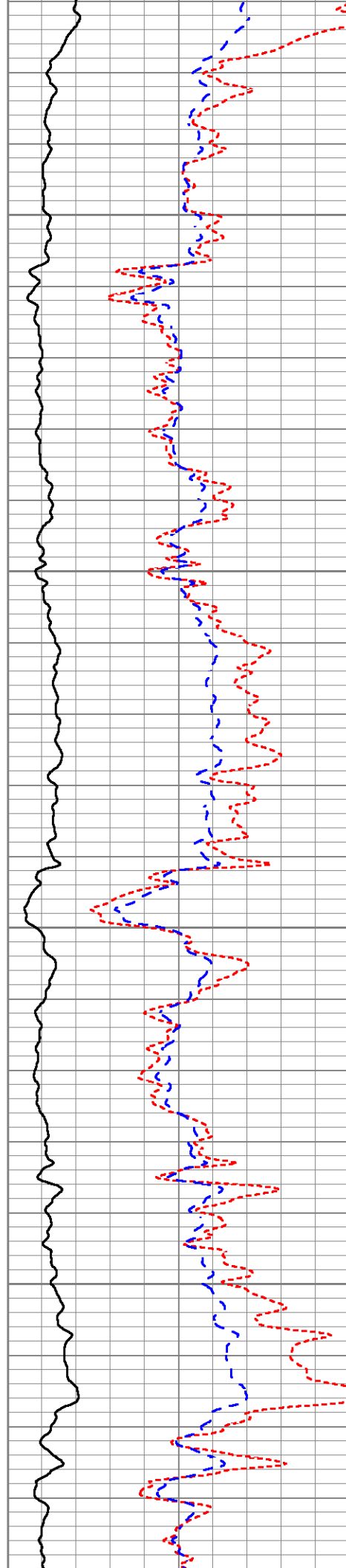


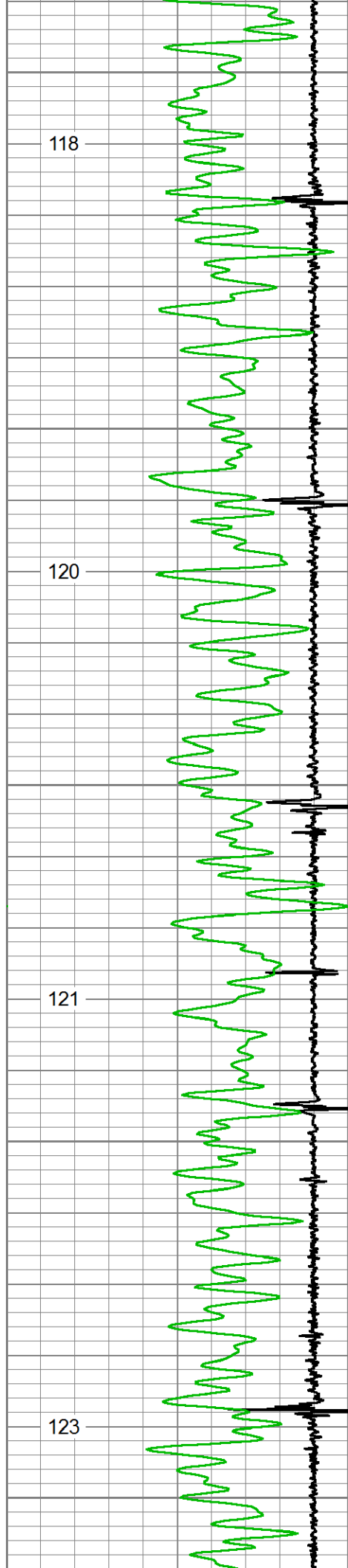
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2600

2650

2700





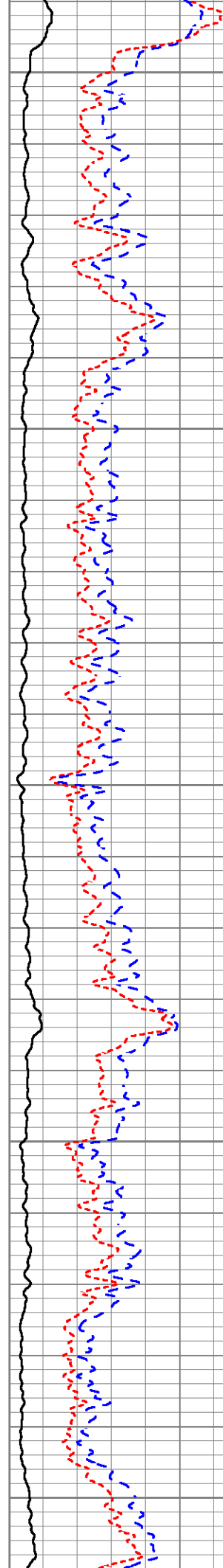
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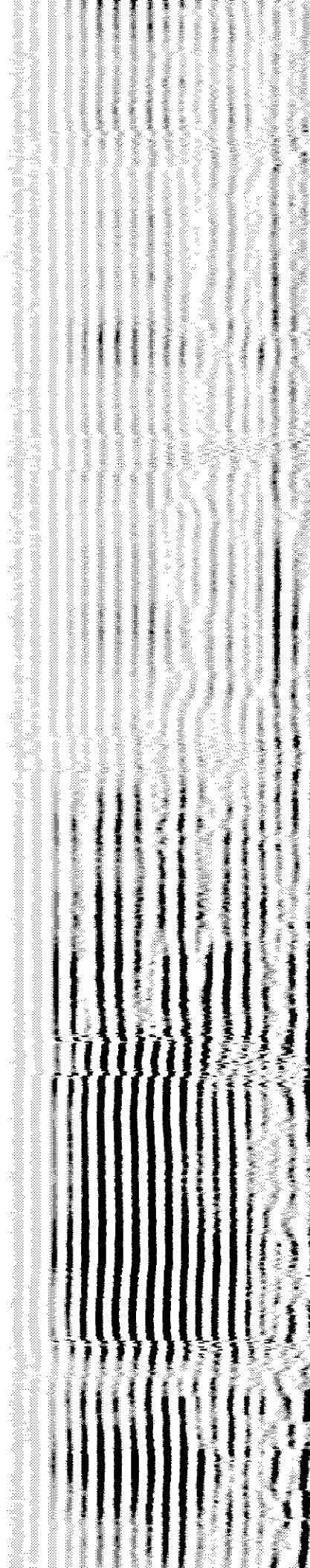
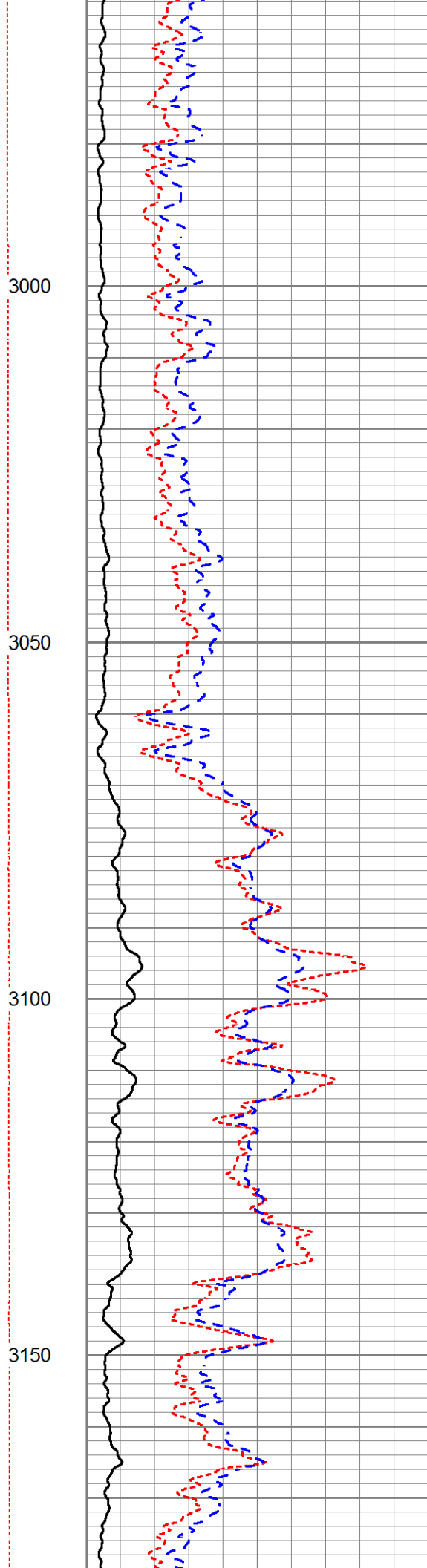
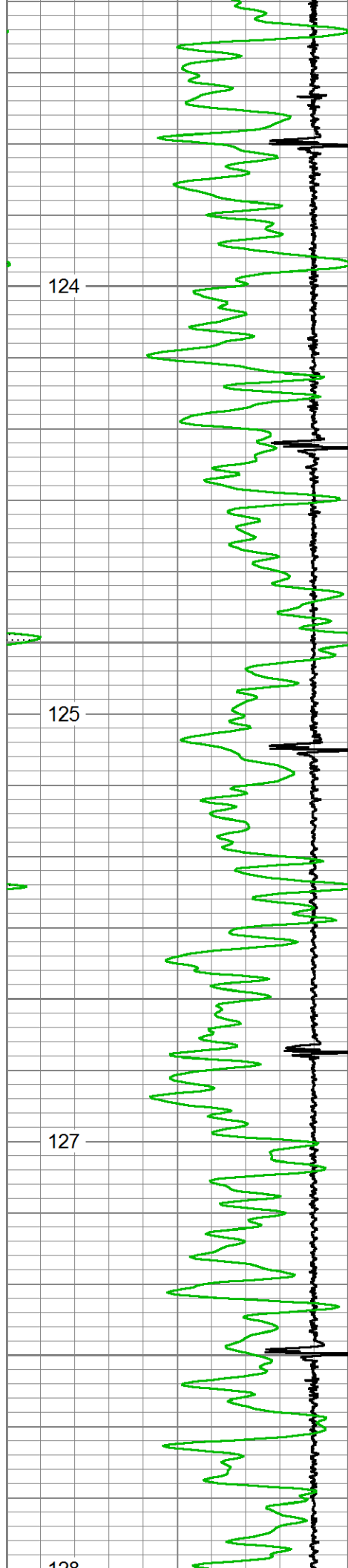
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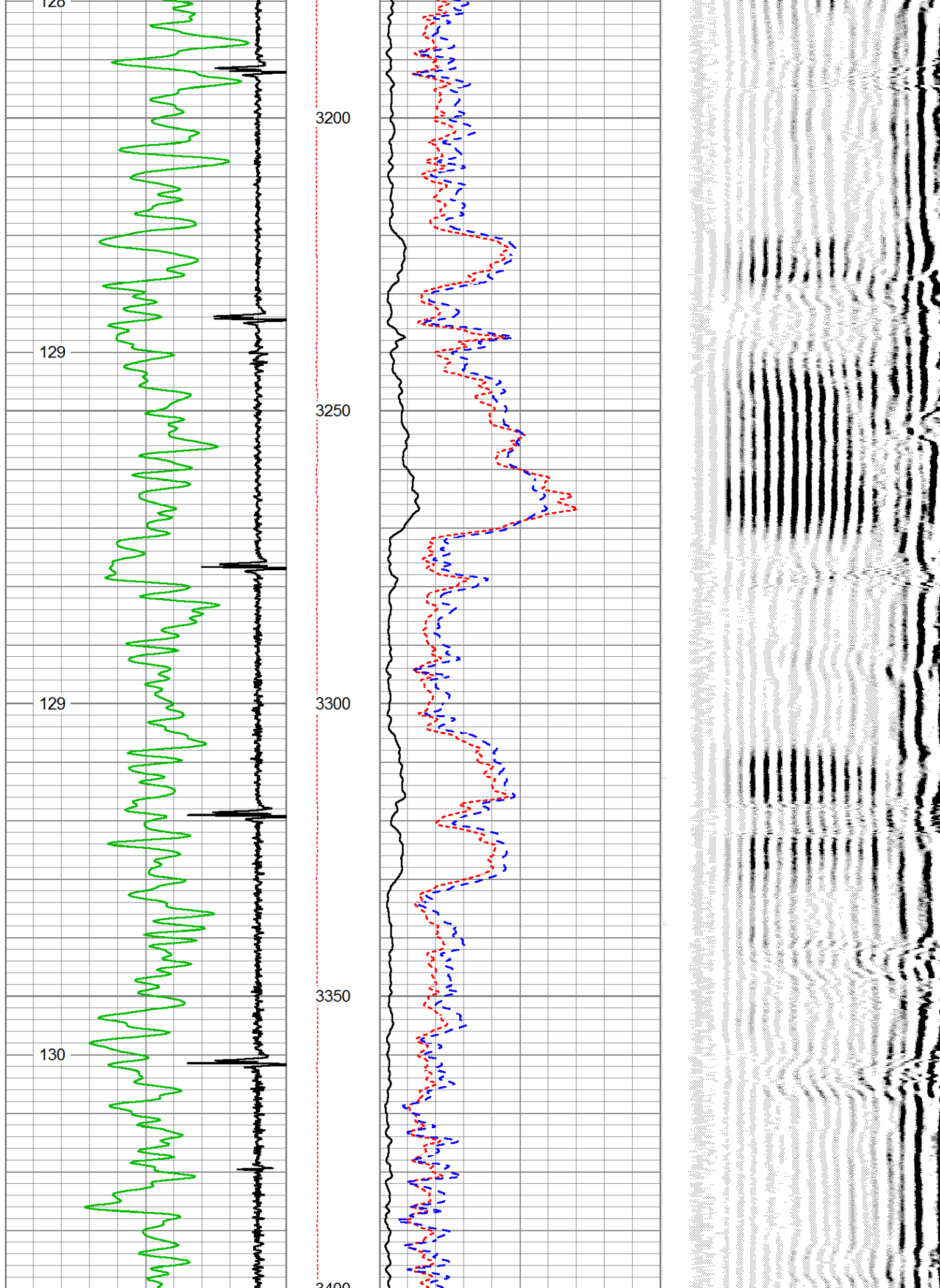
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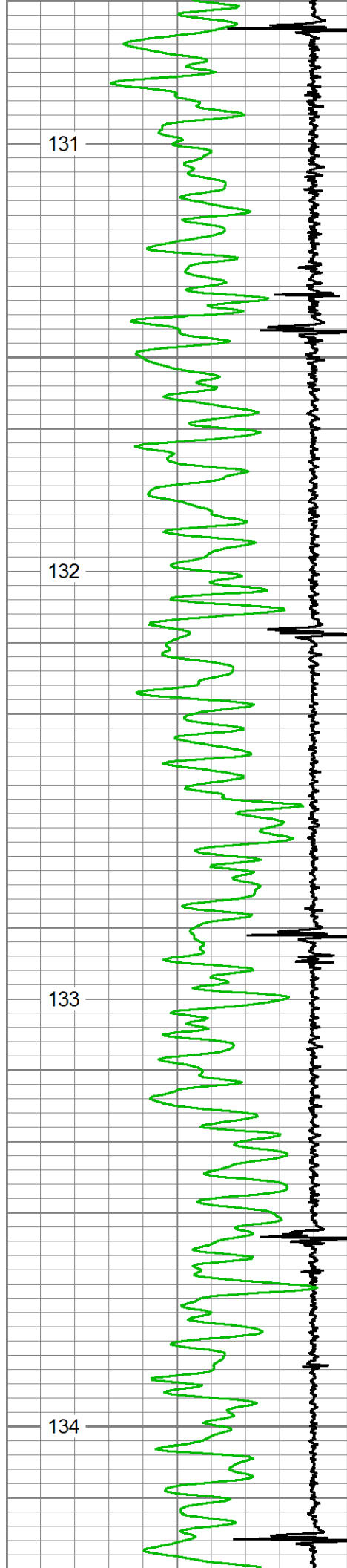
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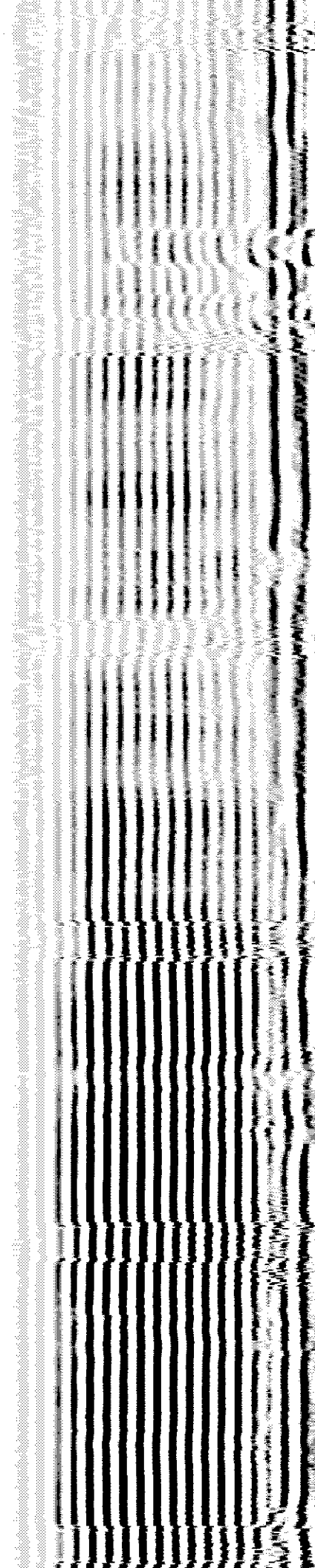
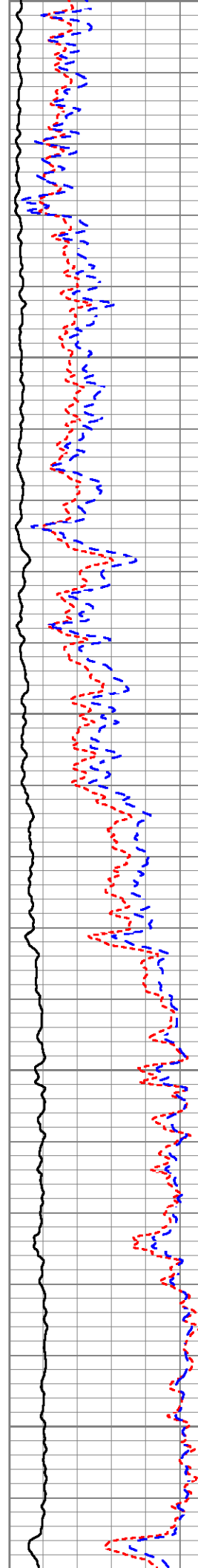


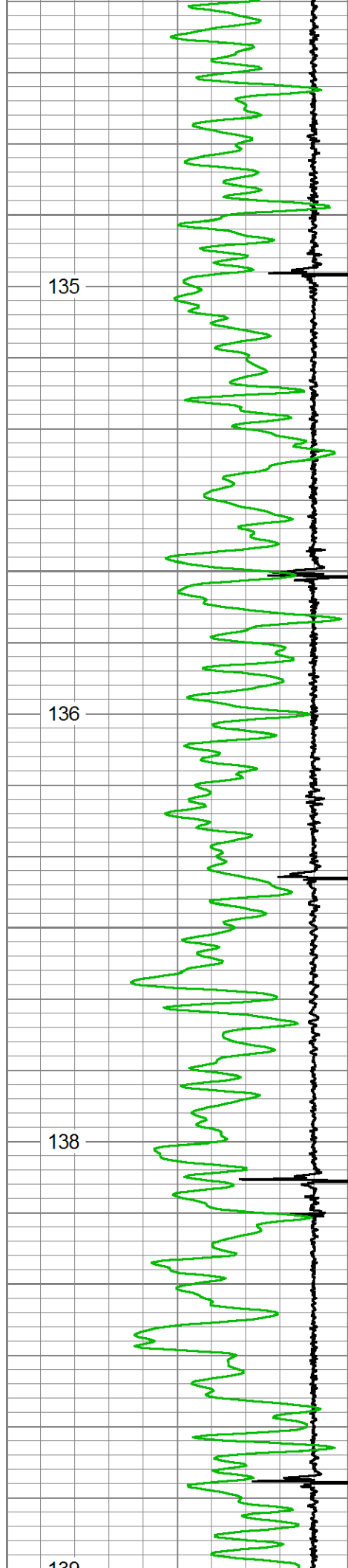






3400
3450
3500
3550
3600



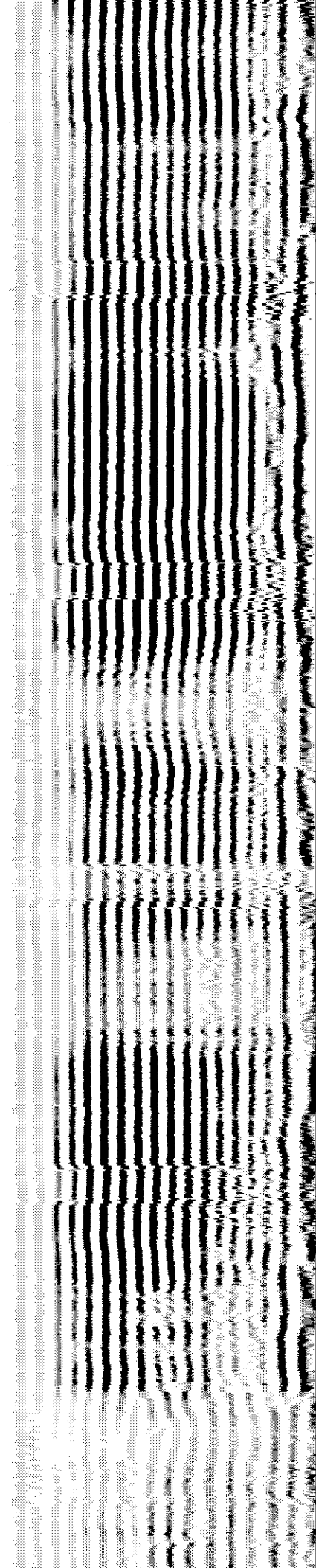
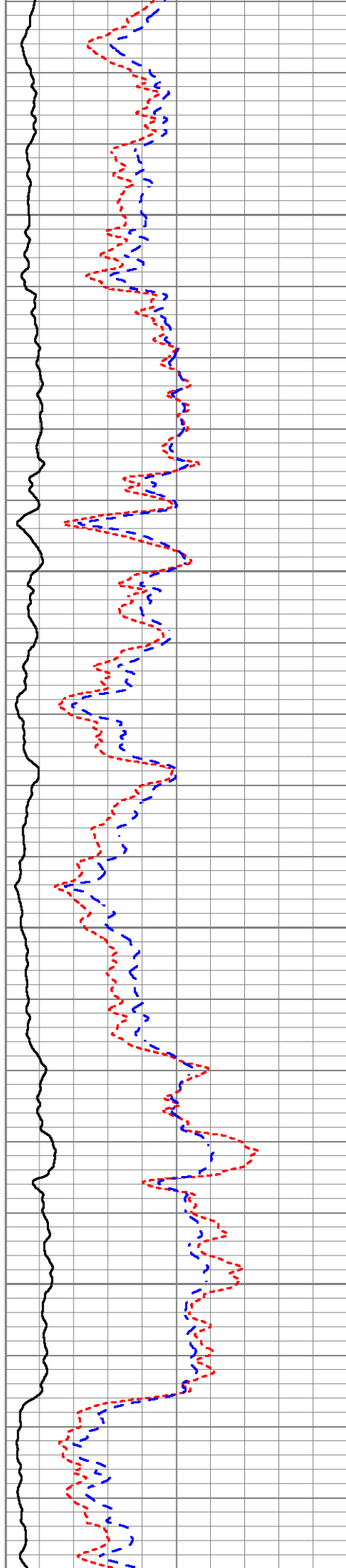


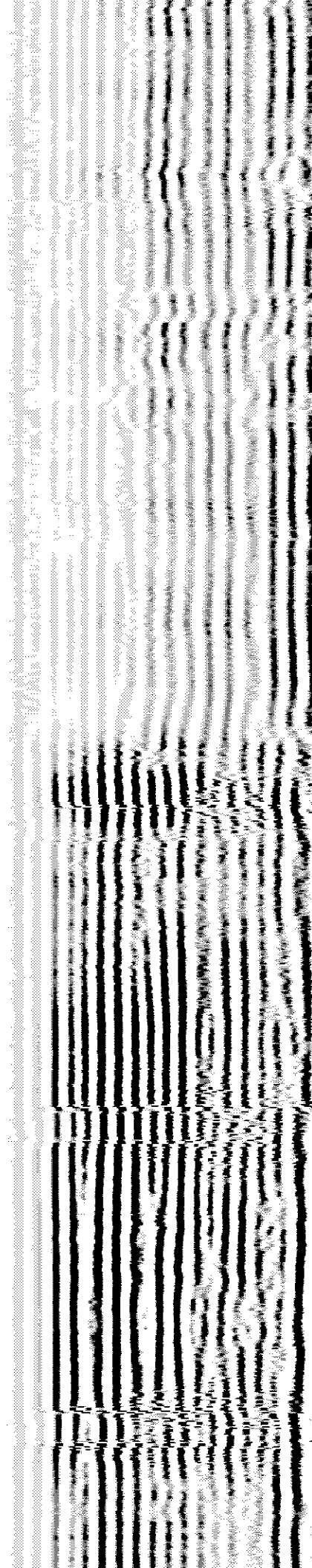
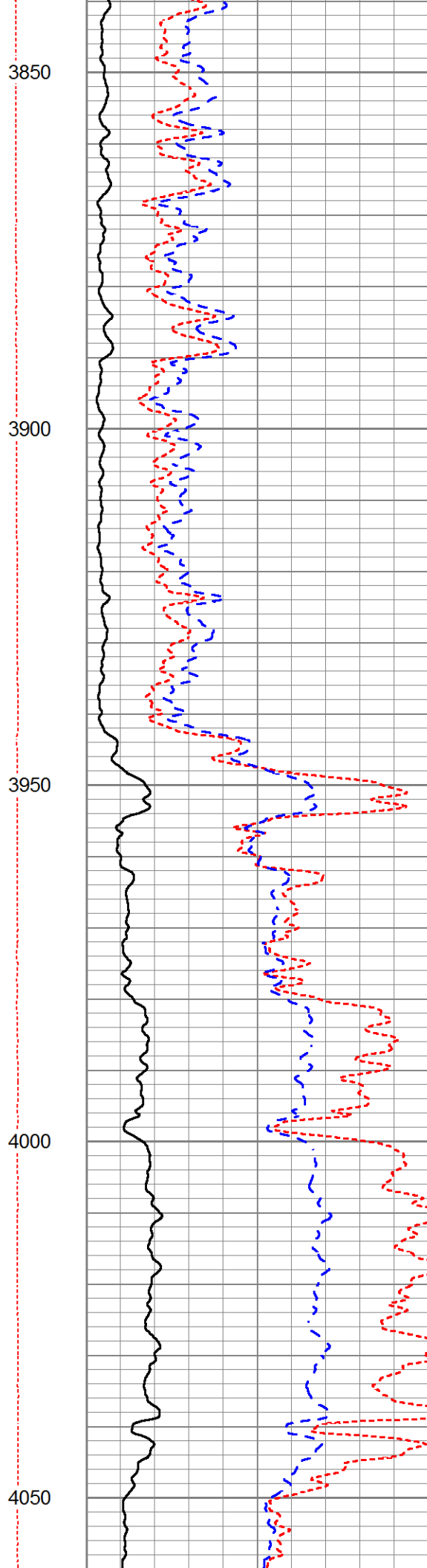
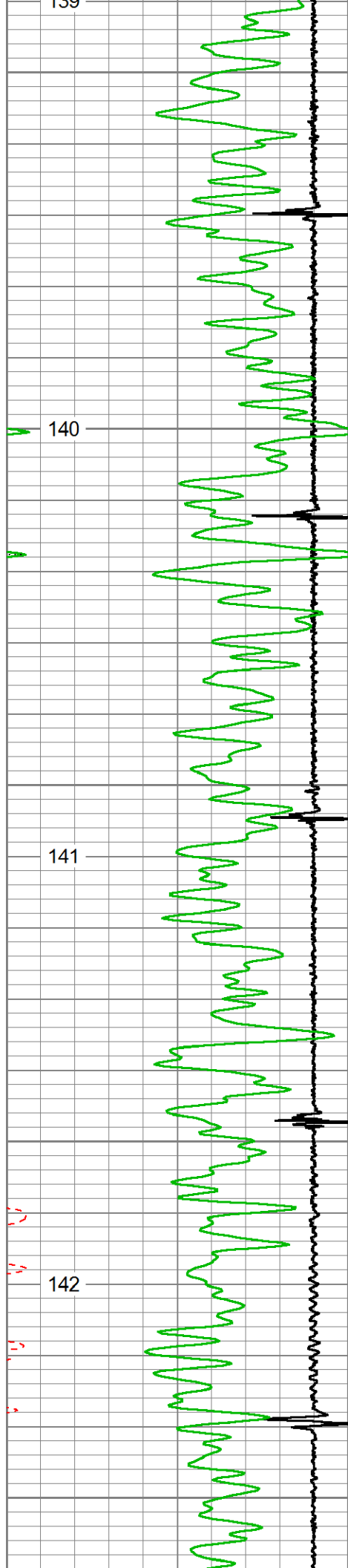
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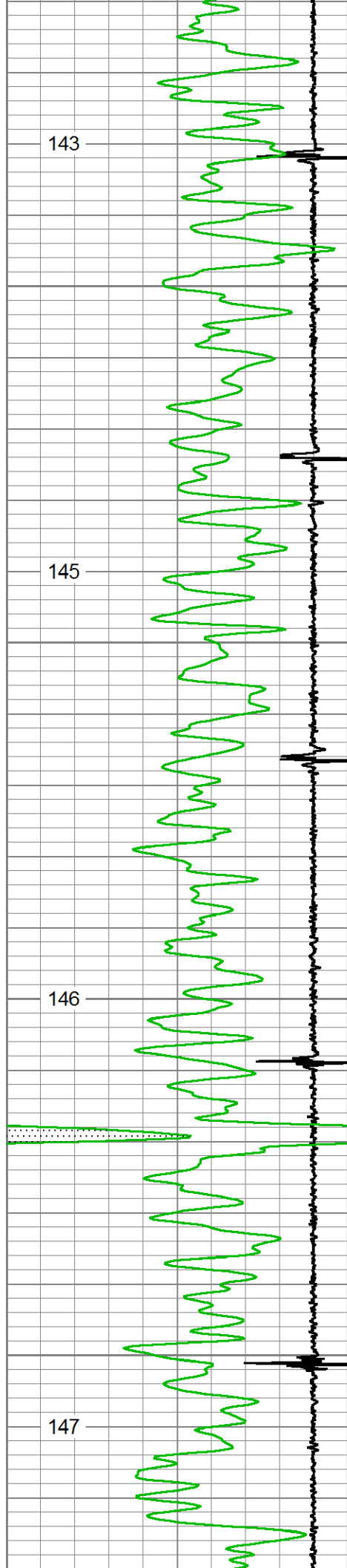
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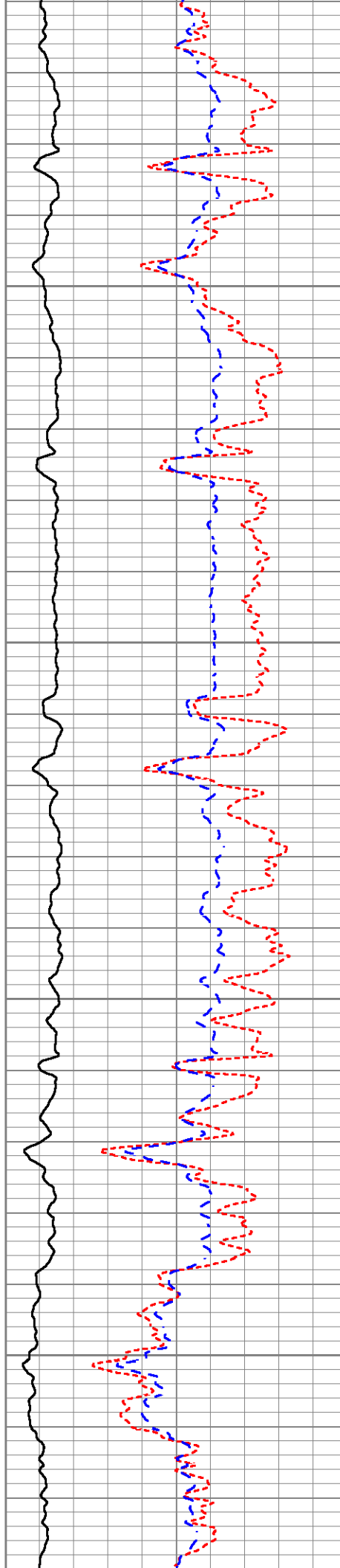
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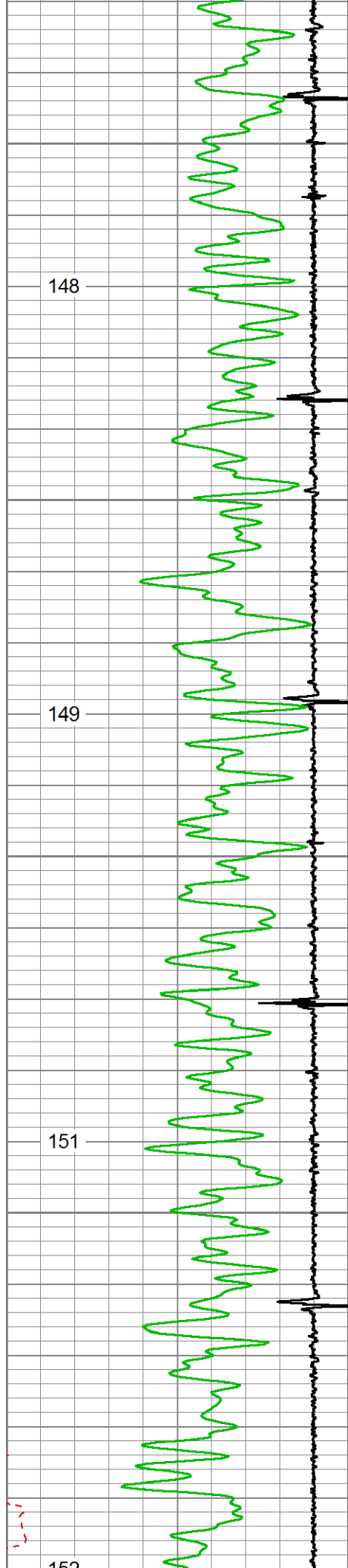






4100
4150
4200
4250





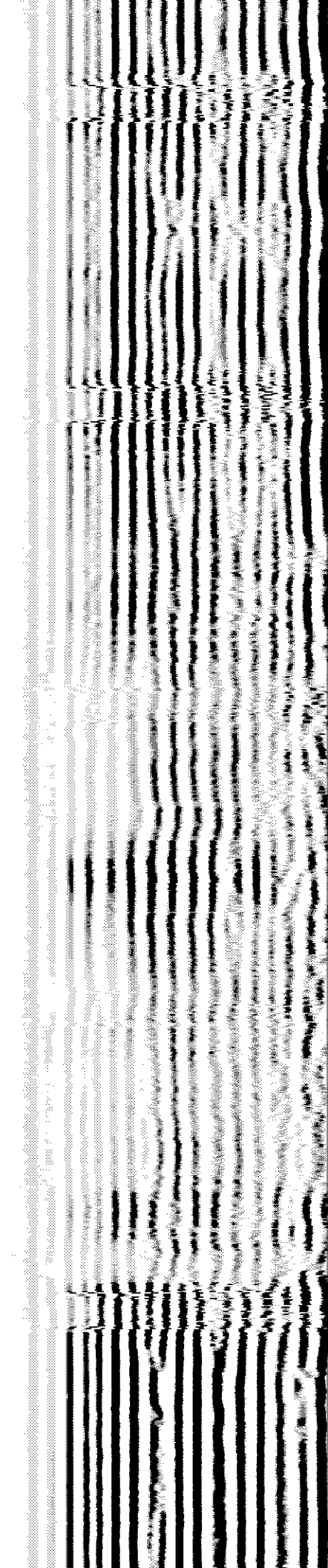
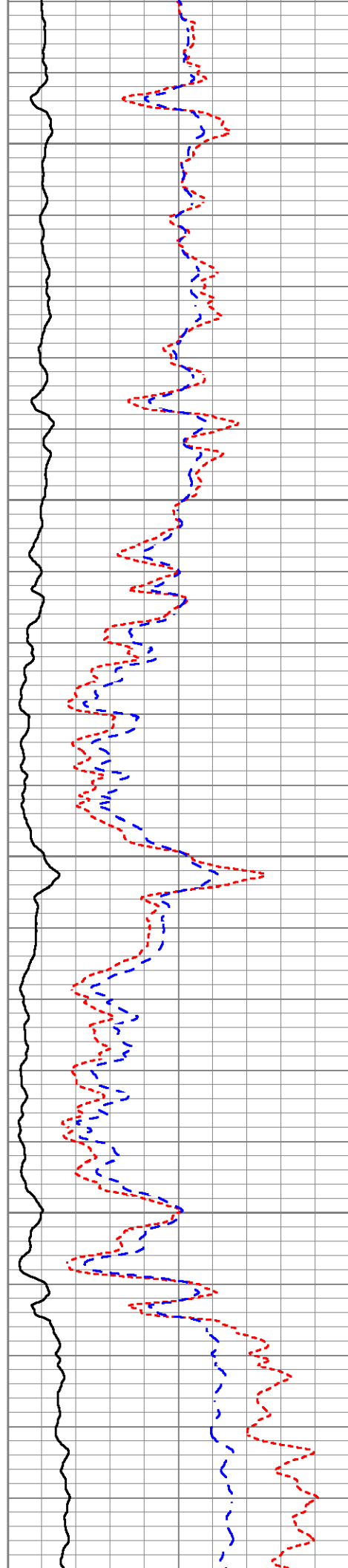
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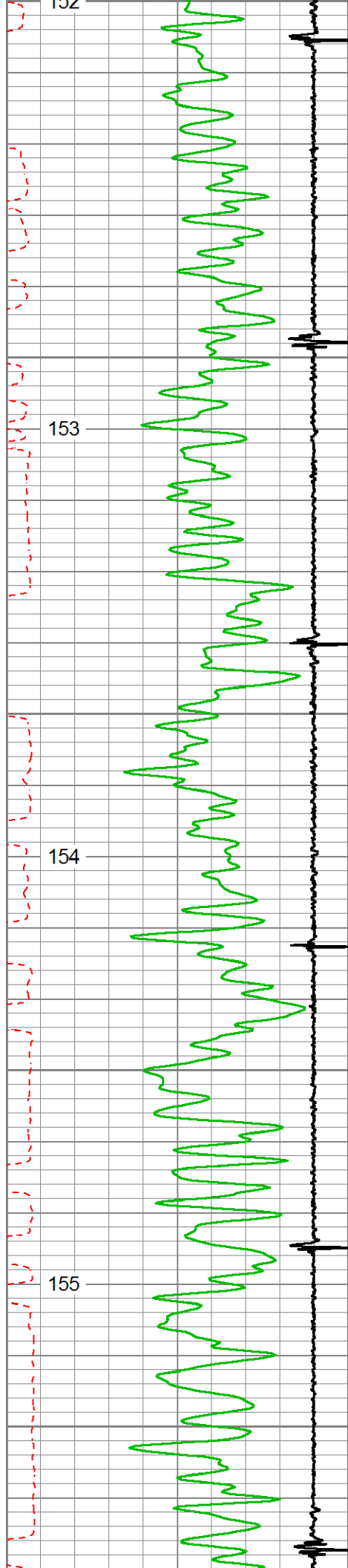
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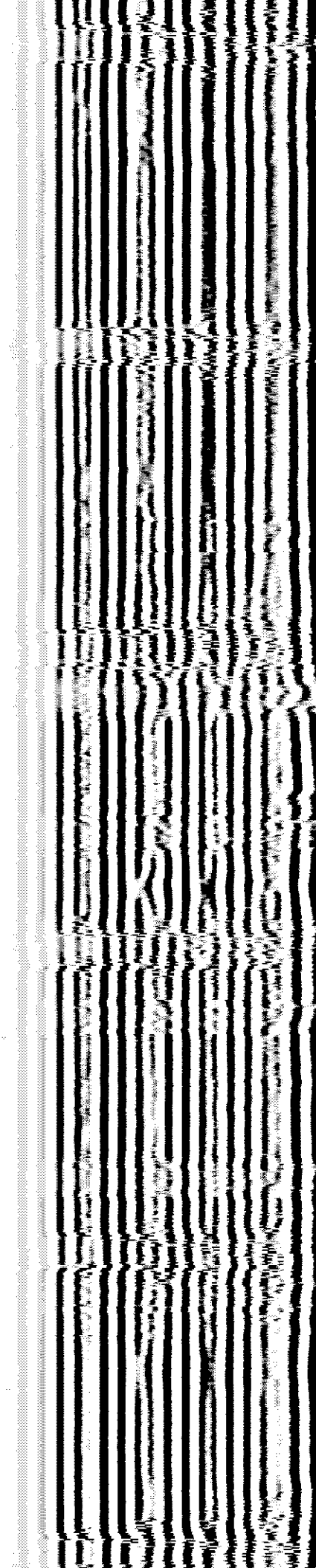
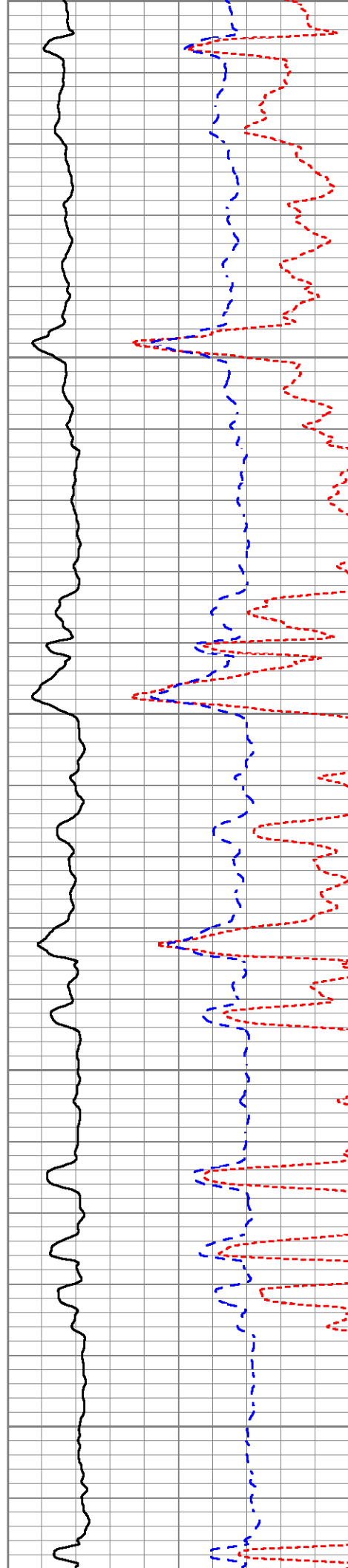
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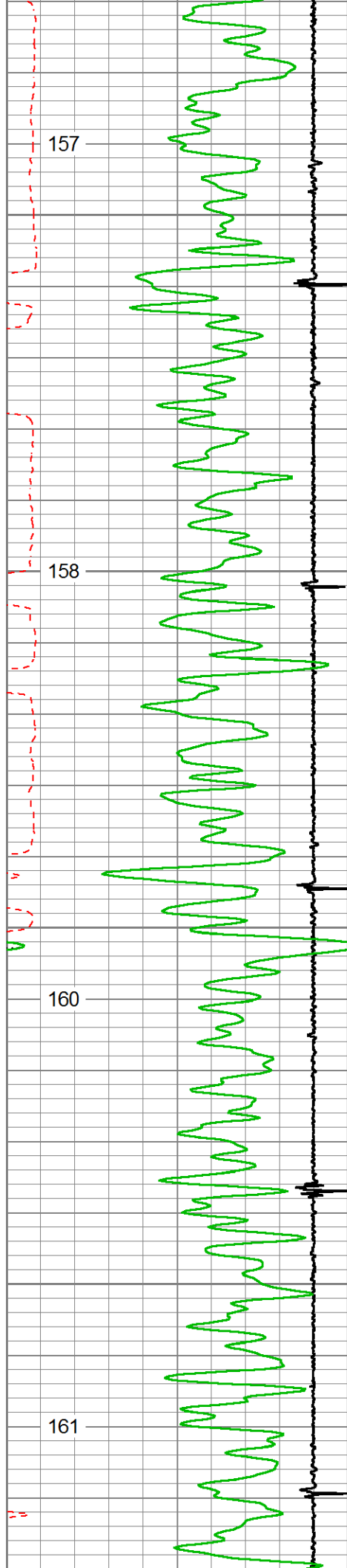
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4600
4650
4700



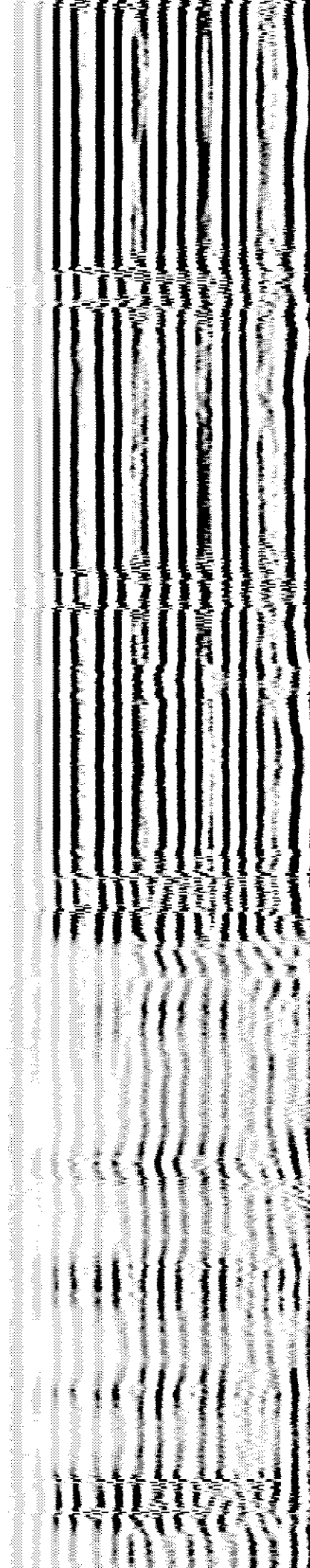
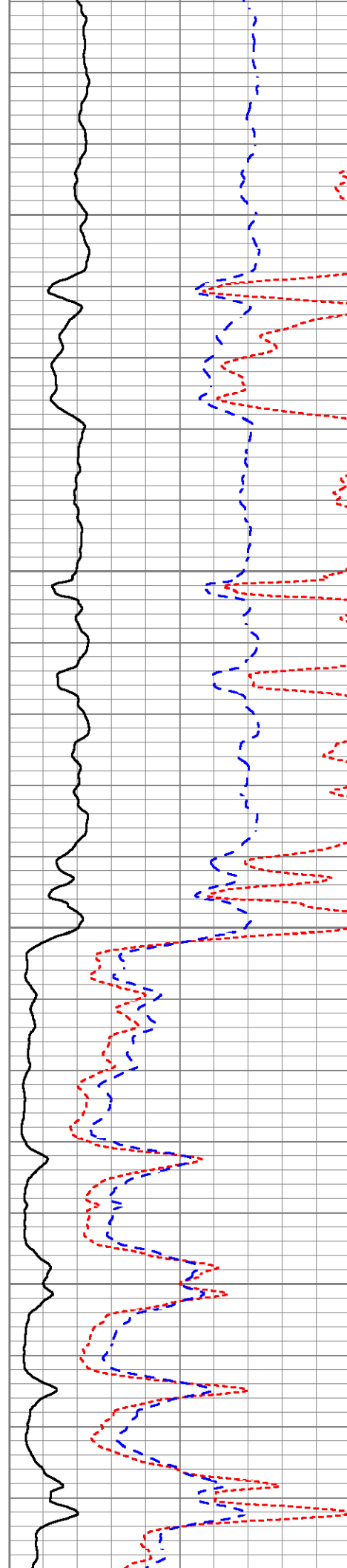


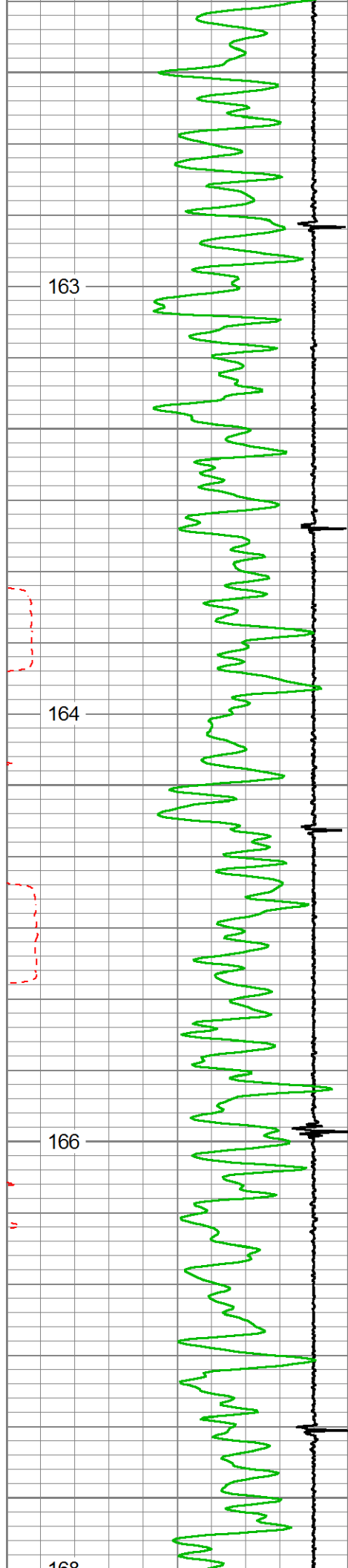
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4850

4900





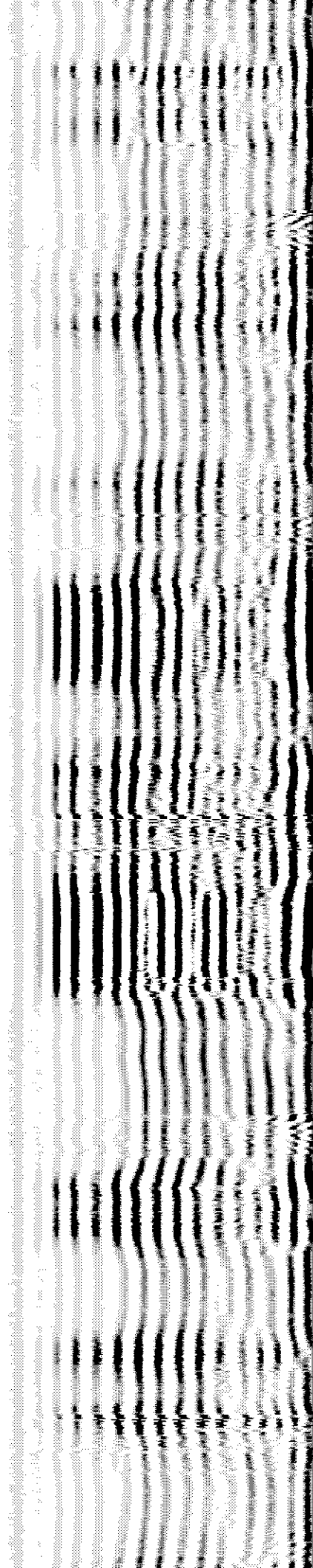
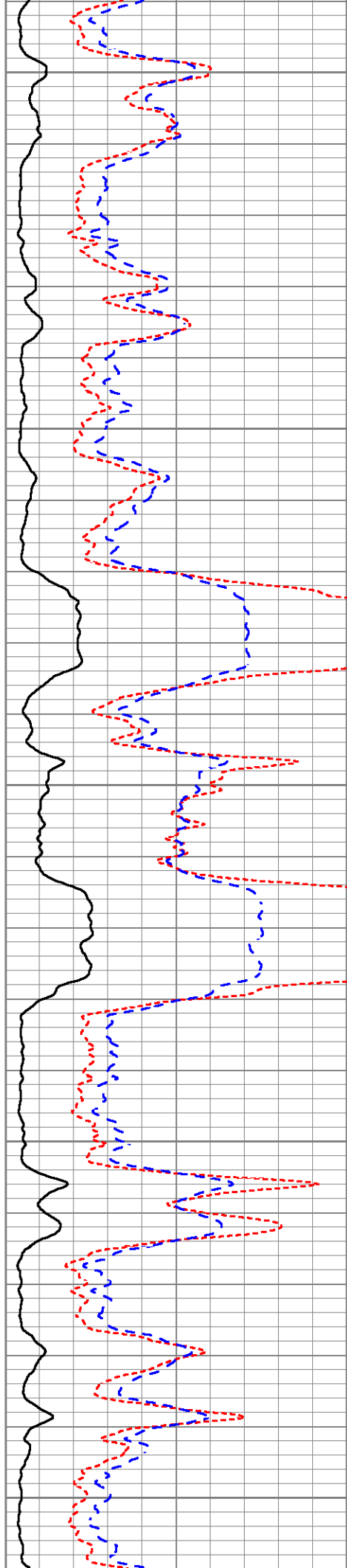
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5050

5100

5150

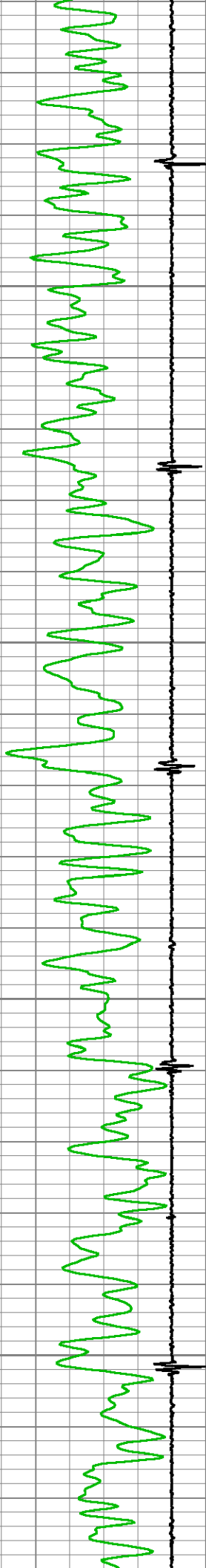


168

170

171

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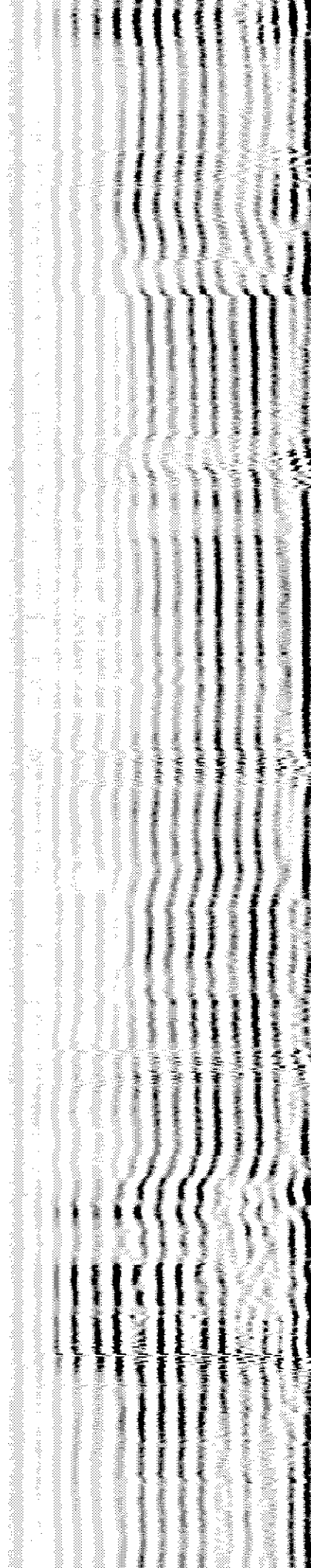
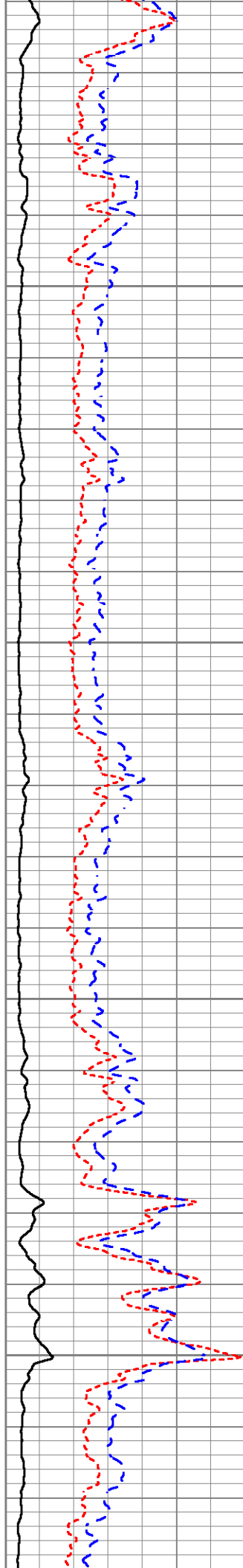


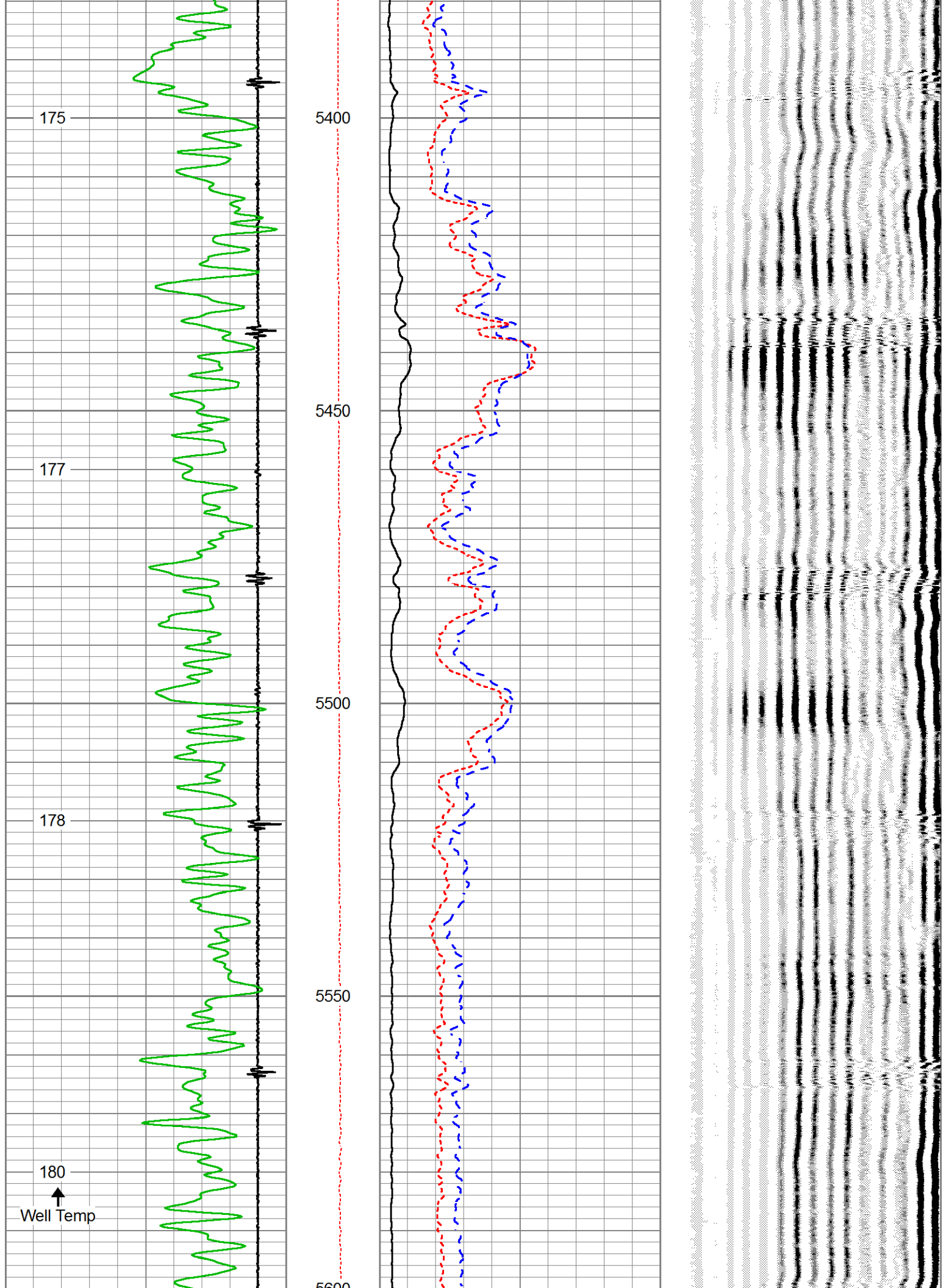
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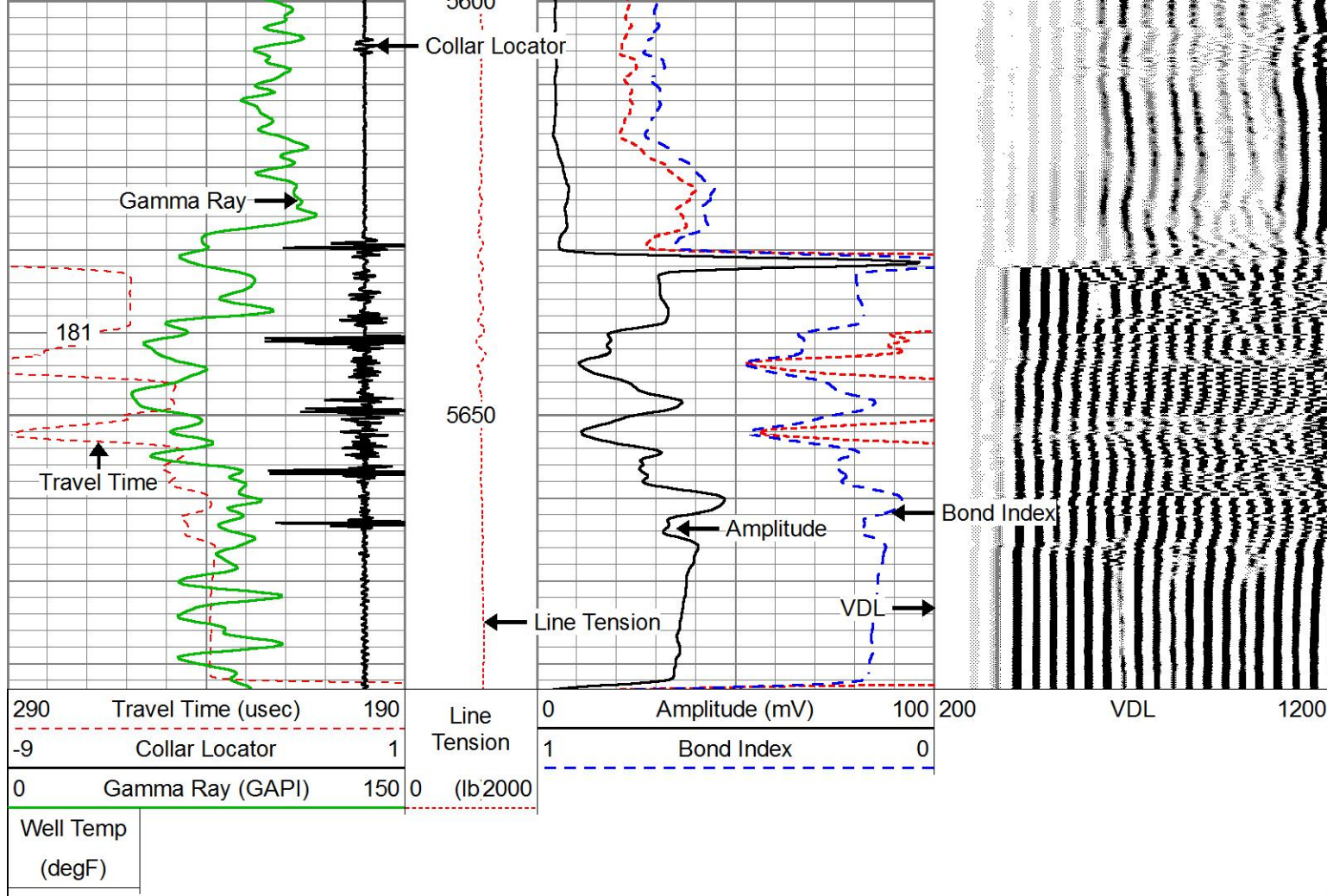
5250


5300

5350









PIONEER
Pioneer Energy Services

REPEAT SECTION

LOGGED WITH 0 PSI APPLIED AT SURFACE

Database File: state pronghorn 42-32-31mrlnb_cbl.db

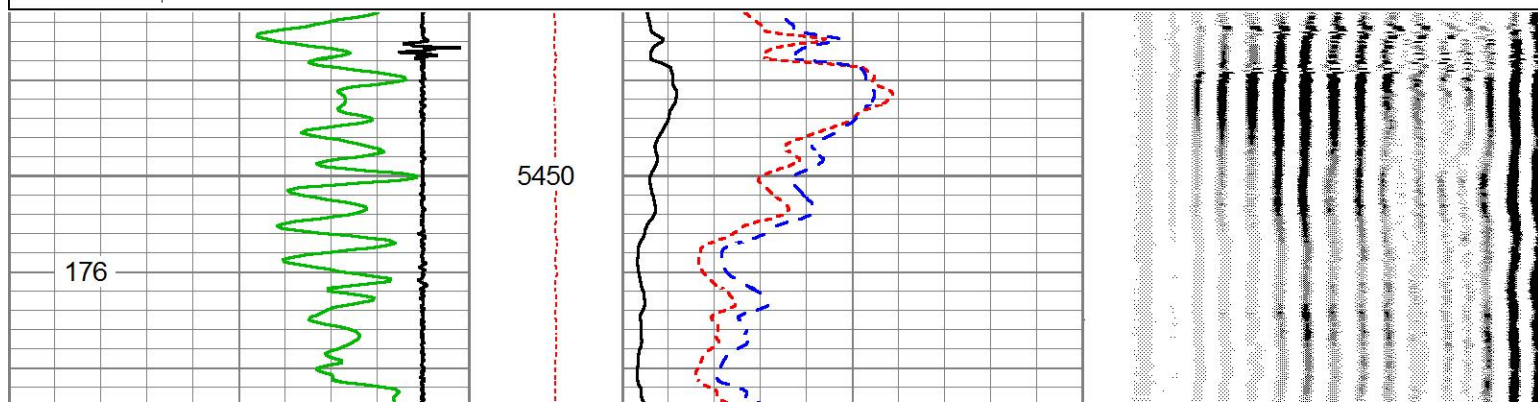
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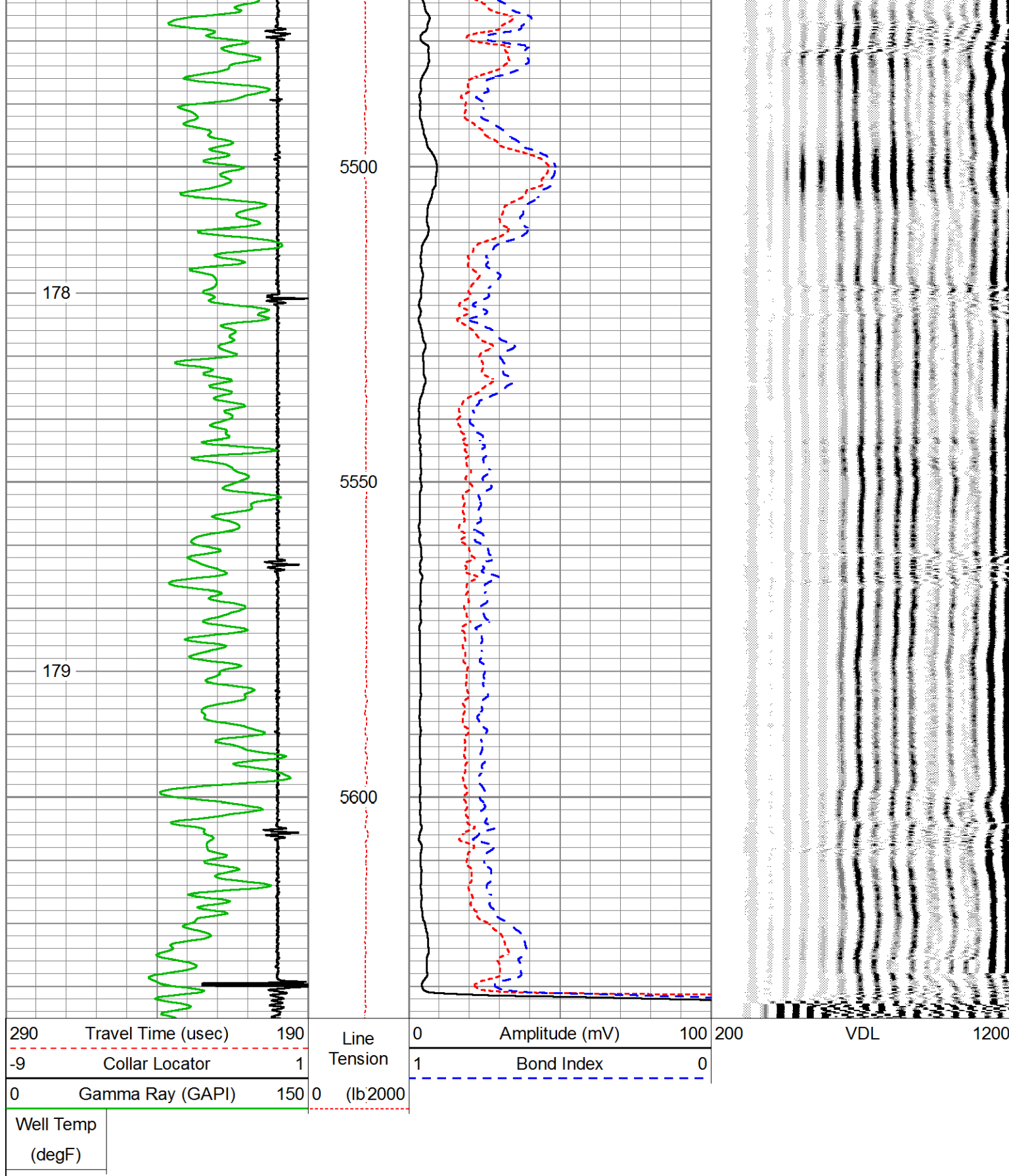
Presentation Format: pinr_cbl

Dataset Creation: Tue Dec 08 17:15:49 2015

Charted by: Depth in Feet scaled 1:240

290	Travel Time (usec)	190	Line Tension	0	Amplitude (mV)	100	200	VDL	1200
-9	Collar Locator	1		1	Bond Index	0			
0	Gamma Ray (GAPI)	150	0	(lb/2000)					
Well Temp (degF)									





Calibration Report

Database File state pronghorn v-32-31mrInb.db
Dataset Pathname pass1
Dataset Creation Tue Dec 08 13:13:01 2015

Gamma Ray Calibration Report

Serial Number:

111211

Tool Model:	Probe	
Performed:	Tue Dec 01 07:35:29 2015	
Calibrator Value:	693.0	GAPI
Background Reading:	338.5	cps
Calibrator Reading:	1057.0	cps
Sensitivity:	0.9000	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	141166_7in	
Tool Model:	RBT-C3	
Calibration Casing Diameter:	7.000	in
Calibration Depth:	1108.300	ft

Master Calibration, performed Tue Dec 01 07:01:05 2015:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	0.018	1.551	1.000	62.000	63.000	-0.500
CAL	0.014	1.749				
5'	0.012	1.520	1.000	62.000	47.035	0.427
SUM						
S1	0.019	1.508	0.000	100.000	67.153	-1.255
S2	0.019	1.538	0.000	100.000	65.814	-1.236
S3	0.019	1.532	0.000	100.000	66.111	-1.289
S4	0.019	1.529	0.000	100.000	66.199	-1.241
S5	0.019	1.522	0.000	100.000	66.509	-1.237
S6	0.017	1.532	0.000	100.000	65.992	-1.102
S7	0.018	1.515	0.000	100.000	66.774	-1.188
S8	0.019	1.542	0.000	100.000	65.640	-1.238

Temperature Calibration Report

Serial Number:	141166_7in	
Tool Model:	RBT-C3	
Performed:	Wed Dec 02 09:38:42 2015	
	Reference	Reading
Low Reference:	35.00 degF	29.90 degF
High Reference:	91.00 degF	102.60 degF
Gain:	0.77	
Offset:	11.97	
Delta Spacing	1	



Company	BONANZA CREEK ENERGY		
Well	STATE PRONGHORN 42-32-31MRLNB		
Field	WATTENBERG		
County	WELD		
State	COLORADO	Country	USA